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OVERSEAS RAILWAYS

SPECIAL NUMBER OF THE RAILWAY GAZETTE

This week there has been issued the Annual Special Number of "The Railway Gazette" devoted entirely to recent progress made by, and current problems affecting, forty important railways in the Colonies, Dominions, India, and other countries such as Argentina and Brazil where British-owned railways operate or are partly British-officered. This number is additional to the ordinary weekly issue, and has been sent to all annual subscribers. Extra copies, price 2s., may be obtained through any newsagent, or direct from the Publisher, post free, 2s. 6d. For further particulars see Advertisement page 25

The Railway Crisis and Railway Staff

THE annual dinner of the L.N.E.R. (G.N. Section) Athletic Association occurred this year on the heels of the railways' petition to the Minister of Transport for relief from the restrictions which at present trammel them in meeting road competition. In his speech at the dinner (reported on page 969), Mr. William Whitelaw described the troubles of all the railways as worse than they had ever been. The L.N.E.R. staff, however, could face adversity supported by the knowledge that in Sir Ronald Matthews the company now had as its Chairman one of the soundest business men in the United Kingdom. Sir Ronald Matthews, replying to the toast of the L.N.E.R. which Mr. Whitelaw had proposed, described the present position of the railways as grossly unfair to their staff, in that unless remedied it might involve a reduction in the numbers employed. They needed the help of the Government, but in seeking it would not object to restrictions placed upon them in the public interest provided similar ones applied to their competitors. Granted equality in competitive conditions, and helped by the spirit of harmony among its staff which Mr. Whitelaw had done so much to promote, he was sure the L.N.E.R. would still go forward from strength to strength.

* * * *

Common Carriers and Rate Publication

Points of considerable interest have been raised in recent letters to *The Times* on the Road-Rail question. In two letters written on behalf of the British Road Federation it has been stated (1) that "road transport concerns cannot become common carriers as they are limited by the licensing authorities regarding the number and tonnage of their vehicles"; and (2) that "road haulage rates are published or must be disclosed on demand." Both these statements are challenged by "Lex" in *The Times* of November 29, who shows that the road carrier under an "A" licence can carry as a common carrier if he so chooses. Regarding (2), under Section 5 (2) of the Road & Rail Traffic Act, 1933, an applicant for a road transport licence may be required to submit to the licensing authority "particulars of the rates charged by the applicant." But, "Lex" maintains, even under this provision there is no obligation on the road haulier to adhere to these rates or to submit any new rates or variations of old rates which may be brought into operation during the currency of the licence. Neither under Section 5 (2) nor any other statutory provision are road hauliers, in the opinion of "Lex," required to make their rates accessible to their competitors and the public in the same way as railway rates are today.

* * * *

The Week's Traffics

Compared with the corresponding week in 1937 the traffics of the four main line companies for the past week show a decrease of £300,000, following a decline of £288,000 in the 46th week.

	47th Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	
	£	£	£	£	£	%
L.M.S.R. ..	– 8,000	– 98,000	– 45,000	– 151,000	– 2,680,000	– 4·46
L.N.E.R. ..	– 3,000	– 50,000	– 34,000	– 87,000	– 1,989,000	– 4·53
G.W.R. ..	– 2,000	– 29,000	– 22,000	– 53,000	– 1,044,000	– 4·15
S.R.	+ 5,000	– 6,500	– 7,500	– 9,000	– 109,000	– 0·85

In merchandise receipts the figures for 1938 continue to compare unfavourably with those for the corresponding period in 1936, as indicated in the following table:—

	47th Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	
	£	£	£	£	£	%
L.M.S.R. ..	+ 3,000	– 70,000	– 2,000	– 69,000	– 58,000	– 0·10
L.N.E.R. ..	– 2,000	– 42,000	– 12,000	– 56,000	+ 64,000	+ 0·15
G.W.R. ..	– 1,000	– 18,000	– 7,000	– 26,000	+ 294,000	+ 1·23
S.R.	+ 7,000	– 4,500	– 3,500	– 1,000	+ 653,000	+ 3·44

Passenger train receipts for the 47 weeks of 1938 show an improvement of £2,654,000 in comparison with the corresponding period of 1936, and coal class takings are still £902,500 up, but merchandise earnings are down £2,603,500.

* * * *

Peruvian Corporation Railways

The railways and the connecting steamers on Lake Titicaca brought into the revenue account of the Peruvian Corporation for the year ended June 30, 1938, £131,909, against £220,021 for the previous year. Gross railway traffic receipts fell from £1,031,990 to £948,631, but working expenses rose from £798,097 to £804,044. The volume of goods traffic was much the same, at nearly 1,400,000 tons, but the decrease in goods revenue was attributable mainly to intensified road competition which necessitated a lowering of railway rates. Social legislation in Peru prevented any reduction in expenses. On the Central Railway, of 259 miles on the 4-ft. 8½-in. gauge,

the net receipts fell from £131,430 to £103,244. The Southern system, consisting of the Southern Railway in Peru (535 miles on the 4-ft. 8½-in. gauge), of the Guaqui—La Paz Railway (60 miles of metre-gauge line) in Bolivia, and of connecting steamers on Lake Titicaca, had to reduce its net receipts from £82,769 to £49,662. A proportion of the through traffic to La Paz is paid for in Bolivian currency, which has to be converted to sterling at a very low rate, and the low price of wool also affected traffic. Sugar traffic on the Trujillo Railway (60 miles of 3-ft. gauge) was weakened by a shortage of water for irrigation.

* * * *

Overseas Railway Traffics

The Buenos Ayres Western Railway has improved its traffic position during the past fortnight by £5,211, and the decrease on the Buenos Ayres & Pacific for the same period is only £1,614 net. At the same time there is a distinct slackening in the rate of decrease on the Central Argentine, which in the past two weeks amounted only to £14,207.

	No. of Week	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
		£	£	£	£
Buenos Ayres & Pacific ..	22nd	81,700	+ 2,296	1,556,579	— 163,149
Buenos Ayres Great Southern ..	22nd	129,2'8	— 9,864	2,645,037	— 31,142
Buenos Ayres Western	22nd	5',055	+ 3,102	864,330	— 135,609
Central Argentine	22nd	103,703	— 7,814	2,204,054	— 578,182
Canadian Pacific .. .	47th	557,000	— 22,400	25,254,800	— 516,600
Bombay, Baroda & Central India	32nd	236,475	— 14,700	5,434,500	— 75,525

Gross earnings (£23,456,200) of the Canadian Pacific Railway for the first ten months of 1938 show a decrease of £510,000, and the net earnings of £2,675,400 are £795,200 down.

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Railway & Canal Commission Report

The report of the Railway & Canal Commission for the year 1937 was issued quite recently. There is no change in the personnel of the Court; Lord Finlay is the Ex-Officio Commissioner for England and Wales, Lord Carmont for Scotland, and Lord Justice James Andrews for Northern Ireland. Of the 106 pending and fresh applications received during the year, no fewer than 92 were concerned with the first railway valuation rolls under the Act of 1930. Of these 92 applications, 74 related to the L.N.E.R., 13 to the L.M.S.R., and five to the Great Western. Withdrawal notices were published in the case of 13 of these applications. Among other matters considered during the year was an application by the Luton, Dunstable & District Coal Merchants' Association, whose members alleged that certain changes contemplated by the L.M.S.R. would deprive them of " reasonable facilities " for handling their coal. In this case the company had been in the habit of letting the Luton coal merchants space for the storage of coal at the Hitchin Road station. In reorganising the station the company proposed to transfer this traffic to a depot at Limbury Road. The judgment of the Court was in favour of the railway company. There were 13 applications relating to mining facilities and amalgamations. One of these was by the Consett Iron Co. Ltd. for the right to lay a mineral railway.

* * * *

Central Uruguay Railway Meeting

Three points were emphasised by Mr. G. H. Harrisson, in his speech at the meeting of the Central Uruguay Railway Company of Monte Video (reported on page 976), as being of vital importance to the recovery of the system. They were: the need for an improvement in the rate of exchange, or at least the maintenance of the rates at present applied to the company's remittances; the co-ordination of transport; and the settlement of the company's outstanding claim against the Uruguayan Government in respect of the rate of exchange at which the guarantees on the Eastern Extension have been calculated since 1935. Upon the last depends to a great extent the company's ability to avoid issuing any of the prior lien debentures authorised under the scheme of arrangement last year. The sale of surplus land in Montevideo will also contribute to the success of this. Since the amalgamation of the companies forming the Central Uruguay system the position has improved, although the results are not considered a satisfactory return for the capital employed or the services rendered. Interest on the first debenture stock has been met, and £114,726 set aside for renewals, carrying forward £13,304. The appropriation of this amount is a substantial help towards the expenditure of £300,000 necessary to cover the most pressing requirements in respect of renewals.

* * * *

Signal Box Fire at Paddington

The fire which put the Arrival signal box at Paddington out of service in the early hours of November 25 has served to draw attention once more to the inconvenience attending any serious disturbance of the signalling apparatus at an important centre and to give additional prominence to the problem of extinguishing fires. The fire at the Southern Railway box at Grove Park on August 23, though destructive, affected a relatively simple traffic location, but a terminus of the importance of Paddington is another matter. In such a case as that the signalling cannot merely be switched out for the time being. Points must be moved and routes set up, entailing tedious hand cranking of the power apparatus. The provision of some simple means of working the points from their machines from outside the box, in case of emergency, has often been discussed and, as mentioned in an editorial article in our issue of July 15 (page 109), it has been a recent French practice to provide equipment enabling this to be done. The existence of three separate power boxes at Paddington proved a blessing, and conjures up visions of what might happen in the event of a similar breakdown where a single large box controls a whole station. No doubt the experience of Paddington will lead to the development of improved precautionary measures.

* * * *

Punctuality under Difficulties

It is in difficult circumstances that railways are often seen at their best in the smoothness and efficiency of the emergency workings that at short notice have to be thought out and brought into operation. The destruction of a signalbox at the entry to one of the principal London terminals might have been expected to cause serious delay to trains during the whole time that hand-signalling was in force, and even after manual working from a temporary box had been brought into operation. Yet a letter on page 949 of this issue relates how, four days only after the Paddington signalbox fire, a correspondent travelled up to London by the Cheltenham Flyer—the fastest train on the Great Western Railway—and to his justifiable astonishment arrived in the terminus dead on time at 5 p.m. This result was made possible partly by the enterprise of the driver of the train, who by a sustained speed averaging 85·7 m.p.h. for over 50 miles got 5 min. in hand on this extremely fast schedule, which proved just sufficient to compensate for the delays caused by the hand-signalling into Paddington. These delays, too, were remarkably small in view of all the arrangements which have had to be improvised in so short a time since the fire. The Great Western Railway has reason to be proud of such *esprit de corps* as this.

London Transport's Visitors

How far the reputation of London Transport has spread beyond the 2,000 sq. miles of its area is indicated by figures in a recently-published review of the board's visitors from overseas. Since its creation in July, 1933, 1,450 transport and other officials have come from overseas countries to inspect the operation and management of London Transport—300 from the Empire, representing 25 Colonies and Dominions, and 1,150 from 33 different foreign countries. Two of the chief attractions have been the bus overhaul and repair works at Chiswick and the railway rolling stock repair works at Acton. Hounslow, Fulwell, Hanwell, and Sutton trolleybus depots, Lots Road generating station, Charlton tram repair works, Ealing Common Underground depot and Chelverton Road bus garage, were other items of particular interest. The automatic lifts at Goodge Street and the ray control of escalators at Warwick Avenue also came in for attention. Officials and engineers have had the opportunity of seeing a wide variety of works in progress—tram-trolleybus conversion, railway extension, garage and station building. Many visitors took advantage of inspecting an accountants and audit department which deals with a balance of £30 million a year, a staff department which looks after 83,000 employees and a publicity department whose work is regarded as a criterion in transport advertising.

* * * *

Sheffield—City of Steel

The special display of pictures appearing in the current issue of *On Time* (the journal of the L.M.S.R. Operating Department), depicting various phases of L.M.S.R. operating activity in Sheffield, is of topical interest inasmuch as the centenary of the first line to serve the city, the Sheffield & Rotherham Railway, occurs this year. Its former Sheffield terminus is now incorporated in the present Wicker goods station, which deals with some 297,000 tons of freight annually. Mention of Rotherham recalls the fact that it was in this town that the Midland Railway established one of its first District Control Offices, working on a system which is now in use throughout the L.M.S.R. With its population of over 500,000 and its many important industries, besides those of iron, steel and coal for which it is famous, Sheffield is one of the key centres of the L.M.S.R. The passenger station, one of the busiest on the system, deals with over 2,000,000 passengers a year. To expedite the working of freight traffic the company is spending £130,000 on enlarging and modernising two of the traffic yards in the area—Roundwood Sidings and Woodhouse Mill. Sheffield is also the headquarters of a Motive Power District—the principal depots are Grimesthorpe, Millhouses, and Canklow, which have a total allocation of 186 locomotives.

* * * *

Streamlined Locomotive Experience

Observations on the "03" class of two-cylinder standard Pacific locomotives on the German State Railway have shown that at 62 m.p.h. (100 km.p.h.) a fully-streamlined example can develop 1,455 d.b.h.p. against the 1,375 d.b.h.p. of a partly streamlined engine and the 1,260 d.b.h.p. of the unstreamlined engine. At 87 m.p.h. the gain had risen to 385 d.b.h.p., equivalent to 48 per cent., the maximum outputs being 1,185, 1,015, and 800 d.b.h.p. respectively. These facts are revealed in a recent article in *Glasers Annalen* by Herr Karl Günther of the Reichsbahn. With the big Borsig-built 4-6-4 streamlined engines of class "05," which are used on the fast Berlin—Hamburg runs, the coal consumption per d.b.h.p.hr. averages 2·45 lb. at speeds of 60-62 m.p.h., whereas non-streamlined "03" Pacifics have a consumption at the same speed of 2·75 lb.; at a speed of 100 m.p.h. the 4-6-4 engines consume 3·35 lb. per d.b.h.p.hr. Although the riding of the 4-6-4 engines along straight track has been exceedingly good, it has been found that on curves the leading bogie was not giving enough guiding action, and that the leading coupled wheels were doing most of the work, with resultant heavy side thrusts indicating the necessity of strengthening the bogie side control springs. Experience with "03" Pacifics over a year in ordinary service, which includes both fast running, and quite an appreciable proportion of slow running confirmed the value of streamlining, the economy in coal consumption per mile being 11½ per cent. and per ton-mile 15 per cent.

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The Passenger and the Railway Coach

We sometimes receive complaints from railway passengers on the subject of the warming, ventilation, and other equipment of the carriages in which they ride. One chief cause of complaint is that on some of the stock used on certain lines in suburban and even semi-long distance trains, the warming apparatus is not equipped with passenger control fittings, with the result, as one of our correspondents puts it, that "the passengers are at times half baked or boiled, whilst on another they sit there shivering." It is no consolation, they say, to be informed that the amount of passenger stock thus equipped nowadays represents a negligible percentage of the whole, and that the vehicles of which this can be said are of older pattern, due in many cases for replacement in the near future. The pronounced railway "grouser" has always exploited the subject of carriage ventilation, as apart from warming, for all it is worth, and it may be assumed would be really aggrieved if the latest no-draught arrangements were introduced on every type and class of coach. The solution of the heating and ventilating problems for railway rolling stock is nowadays largely to be found in the magic words "air-conditioning," but the application of this system to the type of stock used in this country in suburban and similar services may for many reasons be regarded as impracticable.

* * * *

Obstruction Anger

With the Latin poet Horace's plaint: "I loathe and shun the common herd" it is difficult to join issue; unfortunately, when extensive travel on underground railways is a daily necessity, "to loathe" is a human idea, "to shun" a divine ideal. Disregard of simple requests such as: "Keep to the Left," "Let them off the train first" and "Pass right down the car" has become so chronic, that one wonders if writing the words backwards coupled with frequent enunciations in foreign languages (including Latin) would not produce a better response from the teeming millions. Out of many incidents provocative of agoraphobia, we cite one in which we were almost prevented from alighting by an impetuous phalanx, which surged on board before the sliding Sesame had fully opened, and we freely admit that our audible comment (to the address of said phalanx) was rather more Aristophanic than Horatian. Whilst applauding the statistics published by London Transport, we feel that the magnitude of the board's task could be alleviated if some means of thwarting obstructionists were devised; sheer bullying we do not advocate, but possibly the application of what Stalky called "moral suasion" might help matters. At any rate, the time has come to drop polite methods of enlisting the co-operation of London Transportees, and to resort to a modicum of coercion.

XUM

British Railways Bid for Freedom

THE British railway representations to the Minister of Transport for the repeal of the existing statutory regulation of the charges for the conveyance of merchandise traffic by railway, together with the requirements attached thereto, including such matters as classification, publication of rates, and undue preference obligations, have aroused intense interest among traders and the public throughout the country. As mentioned in our issue last week, at the close of the interview with the Minister of Transport on November 23, the companies were asked to amplify their proposals in certain respects. This was done at a further meeting with the Ministry yesterday when it is understood that the companies indicated the nature of the Bill they desired the Minister to present to Parliament and their reasons for asking for this relief. In the meantime, numerous letters have been received by the companies supporting the action which they have taken, and the railway publicity campaign is being continued for the purpose of bringing home to the public the crippling disabilities under which the railways are now operating as compared with road hauliers. These disabilities can be stated quite shortly. With the object of protecting traders against the possibility of a transport monopoly, Parliament has decreed an ever-growing control of railway charges, until at the present time the companies are burdened with an elaborate classification of merchandise and a system of standard charges based on tonnage and distance allied thereto. Under the existing classification, regard must be had to the value of the goods, their bulk in comparison to weight, the risk of damage, cost of handling and various other considerations. As the result, the more valuable and lighter traffic, which is more susceptible to road competition, is charged at high rates, and the heavy traffics, upon which our national prosperity so largely depends, and which is not so likely to be diverted to the road, is carried at low rates.

The railway companies are empowered to quote exceptional rates below the standard, but beyond certain limits they have to secure the prior approval of the Railway Rates Tribunal—a procedure which frequently results in the traffic passing by road before a railway rate can be quoted. In addition, the companies are compelled to publish every rate quoted, and are debarred from giving undue preference to any trader. Thus, when faced with the necessity for reducing a rate to secure business, they must first carefully review the possibility of another trader, quite remote from the area in question, seeking a rate upon a similar level under a charge of undue preference. No other form of goods transport is subject to such restrictions or anything comparable with them, and the railways urge, therefore, that as a condition of their continued efficiency, the whole of these restrictions should be withdrawn and they should be placed in exactly the same position of freedom as other and competing forms of transport. Moreover, the railway companies are common carriers of all traffic, with minor exceptions, whereas road hauliers can pick and choose their traffic. The principal representative trading organisations, whom the Minister will doubtless consult, have not yet made known their reactions to the companies' request, but other business interests, while not immediately challenging the justification for the step taken, desire to know along what lines the companies would be likely to act in the event of their request being granted.

Upon this point, Sir Ralph Wedgwood, Sir William Wood, and Sir James Milne have stated explicitly in recent interviews that the sole object of the companies is to achieve flexibility in dealing with rates and that, in their own interests, the companies are unlikely to take any step that might hamper the development of trade and industry. For this reason, neither wholesale increases nor wholesale decreases in merchandise rates are likely to result from any repeal of the existing statutory regulation of charges. What they do desire, however, is to secure the freedom which the road haulier has to quote reduced rates for traffic between specific points without the necessity of securing the approval of a tribunal or of being forced to make corresponding reductions in other directions. As to the possibility of the companies using their freedom to discriminate between traders, the railways have made it clear that, in their view, in like circumstances there should be like treatment to all members of the public, and that they would strive to achieve this as would any well-managed and uncontrolled business.

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Railway Freight Rebates

UNDER the provisions of the Local Government Act, 1929, the Railway Rates Tribunal began on November 29 its annual review of the operation of this scheme during the twelve months ended September 30, 1938. Under this Act the railway undertakings were relieved from the payment of three-fourths of their local rates on railway hereditaments upon condition that an equivalent amount is contributed to the Railway Freight Rebates Fund for the purpose of assisting trade and industry by the grant of rebates from the carriage charges on certain selected traffics. Consequent upon the reduced valuation of the railways under the Railways (Valuation for Rating) Act, 1930, the sum available for rebates was largely reduced in 1937 and, under the provisions of the Railway Freight Rebates Act, 1936, the rebates are now confined to export coal and agricultural traffics (milk and livestock). When the last review of the operation of the Fund was held in December, 1937, the railway companies estimated that the relief for the twelve months ended September 30, 1938, would be £2,390,000. After providing for interest and sinking fund charges on the stocks raised to liquidate the companies' previous overpayments to the Fund, administrative expenses, &c., the net revenue for the twelve months was estimated at £1,641,192, and the Tribunal decided that no alteration should be made in the level of the freight rebates which stood at 14 2/7ths per cent. of the rates in the case of agricultural traffics and 1½d. per ton plus 20 per cent. of the remainder of the rate on export coal, or 25 per cent. on export coal when the charge was a toll. On the basis of the estimated traffics, these rebates were calculated to absorb £1,635,000. The statements submitted to the tribunal showed that the amounts contributed by the companies in respect of the estimated rate relief during the twelve months ended September 30 last were, as previously estimated, £2,390,000 which, with interest, made the total revenue of the Fund for the period £2,390,906. Deducting therefrom the interest and sinking fund charges, administrative expenses, &c., totalling £749,756, the net revenue of the Fund was £1,641,150. Under the Local Government Act, 1929, as amended by the 1936 Act, £1,312,920 of this amount should have been paid in the shape of rebates on coal traffic and £328,230 in respect of milk and livestock. The figures now published by the Railway Clearing House, however, show that owing to the serious and unexpected decline in traffics, only £1,479,941 was paid out, of which £1,180,337 represented rebates on shipment coal and £299,604 rebates on milk and livestock. Thus during the twelve months ended September 30 last, the amounts paid into the Fund by the railway companies exceeded the

outpayments by £161,209. The companies estimated that the rate relief for the ensuing twelve months ending September 30, 1939, will be the same as during the period under review, namely, £2,390,000. They also estimated that the receipts from agricultural traffic would show an increase of 2½ per cent. over the year ended September 30, 1938, while the receipts from export coal would show a decrease of 3½ per cent. As the net revenue of the Fund for the year was estimated at £1,809,000, the tribunal decided to increase the rebates, as from December 1, 1938, on agricultural traffics (milk and livestock) from 14⅔ to 16⅔ of the carriage charges, and that on export coal from 1½d. per ton plus 20 per cent. of the remainder of the conveyance charges to 1½d. per ton plus 26½ per cent. of the carriage charges, and from 25 per cent. to 31½ per cent. of the tolls where such are charged on coal. It is estimated that these rebates will absorb £350,000 in the case of the agricultural traffics and £1,377,000 for export coal, leaving a probable unabsorbed balance of £82,000.

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Northern Ireland Transport

THE report of the M'Lintock Committee on road and railway transport in Northern Ireland was laid on the table of the Northern Ireland House of Commons on November 24, and we publish on page 971 a summary. The existing Road Transport Board in Northern Ireland was established by Act of Parliament in 1935 to take over road passenger and freight services in Northern Ireland, outside Belfast and Londonderry. The first two years' working showed considerable financial losses, and the Government set up a special committee to consider the whole question. The committee consisted of Sir William M'Lintock, Sir Herbert Walker, and Mr. J. S. Nicholl. It was appointed on February 24, 1938, but its investigations were suspended until the completion of the public inquiry into transport facilities and charges by His Honour Judge Thompson, which is now also published. From the report of the committee it would appear that the 1935 Act has failed to secure a financially paying, adequate, and efficient transport system, and the problem awaiting solution is in some respects the same as it was before the Act was passed. So much is this so that the committee recommends that the pooling scheme should be treated as having been inoperative from its commencement, since it never had the effect intended by the Act. There are certain indications that the Act has hardly had a fair trial. There was no doubt opposition, and the composition of the board has not escaped criticism.

Briefly, the committee recommends the amalgamation of the present Road Transport Board with the railway systems of the L.M.S.R. (Northern Counties Committee) and the Belfast & County Down Railway. The board and the Belfast & County Down Railway would then cease to exist. The inclusion of the Great Northern Railway would be desirable, but the difficulties in the way of this are too formidable and a pooling arrangement is recommended. The arrangement with the Great Northern should include the Sligo, Leitrim & Northern Counties Railway. The committee also recommends that eventually the omnibus services of the Belfast Corporation should be merged with the new body when its success is assured. Recommendations of the committee include provision for complete readjustment of the finances of the present board. The report adds that the Government will be called upon to implement its present guarantee in respect of the board's borrowings, and it is difficult to see how it can avoid accepting the obligation to provide the additional finance which will be necessary and which is likely to bring the amount of its commitment up to a total of £3,150,000.

The recommendations of the committee refer in detail to the introduction of comprehensive schemes for licensing road vehicles, and it is significant that mention is made of the advisability of legislation providing substantial penalties for illegal operation of vehicles. It is also not without significance that the committee should emphasise the need for bold and drastic treatment in dealing with the present situation as regards public transport in Northern Ireland. It may be that, as has been said, the transport facilities of Northern Ireland are in excess of the country's requirements, but it also seems that the problem has been intensified by what Mr. Harold Macmillan recently described as the gap between costs and purchasing power, for if the people of Northern Ireland had been possessed of sufficient of the latter to meet the former, there is little doubt that the transport facilities would not have been found excessive. Meanwhile, the railway companies who are principally interested are considering the report. They will certainly not shirk their public duty in assisting the Government to find a solution of the problem. From the point of view of shareholders the merger is welcomed, but the success of the whole undertaking will depend upon a fair value being placed on all the assets taken over, having regard to their earning capacity.

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Central Uruguay Railway

THE year ended June 30, 1938, on which the report has recently been issued, is the first complete year since the fusion of the constituent companies effected as a result of the scheme of arrangement dated April 15, 1937. Gross receipts increased by £33,764 or 3·46 per cent., and working expenses by only £336, so that net receipts were £33,428 higher. From the total net income of £195,749 has to be deducted £6,117 for exchange differences, £114,726 for renewals, £8,000 for income tax, £51,750 for interest on the 4½ per cent. first debenture stock, and £1,852 for interest paid less received, leaving £13,304 to be carried forward.

	1937–38	1936–37
Passengers	4,972,441	4,638,731
Public goods, tons	968,682	934,422
Average receipt, per ton	9s. 6·73d.	9s. 2·47d.
Train-kilometres	3,899,974	4,045,081
Operating ratio, per cent.	81·83	84·73
	£	£
Passenger receipts	223,108	185,813
Goods receipts	463,090	430,139
Gross receipts	975,871	942,107
Expenditure	798,600	798,264
Net receipts	177,271	143,843

A feature of the traffic in the year under review has been the development of " phono-electric " equipment on excursion trains. The General Manager's report mentions that interest has been aroused in other railway circles by the innovations adopted in this company's system of tariffs, in the shape of extreme simplification of the goods classification and of rating by Zone. These were referred to at some length by Mr. George Mills, Divisional General Manager, Scottish Area, L.N.E.R., in his paper on " The Price of Transport " read at the annual congress of the Institute of Transport in Edinburgh last May.

* * * *

The Channel Crossing

THE criticisms of Mr. A. C. Hardy, in the paper read by him before the Institute of Transport on the subject of the Cross-Channel Services, gave rise in the subsequent discussion to some interesting expressions of opinion by several members who spoke with authority from the point of view of the railway companies. The

paper was reported in our issue of November 18, and we publish this week a letter from the Continental Traffic Manager of the London & North Eastern Railway referring to the Hook of Holland service, in which the steamers, although now ten years old, admittedly meet the requirements. In the discussion of the paper the Hook of Holland and the L.M.S.R. Irish Channel boats both received well-deserved praise. Unfortunately the greater number of our visitors from the Continent and even from America, arrive by the English Channel routes, and it is precisely the services by these routes that receive the most criticism. The crossing of the English Channel, so subject to weather vagaries and tidal changes, has always been a problem, and, short of a Channel tunnel, it will always be difficult to overcome the inconveniences which at the best still make it an ordeal and contribute to the growing popularity of the competing air services. Bigger vessels would help to overcome some of the discomfort for the passenger, but size is of course limited by harbour accommodation in each case.

Unfortunately such improvements as have been made afloat, and it is admitted that these are very great, have not been accompanied by equal improvements ashore. Speed, steadiness and luxury during the sea passage, however desirable, are not the whole story, and increased comfort aboard should be accompanied by a real revolution ashore, if any effort is to be made to compete with the air services. The dismal wind-swept open wharf at Folkestone is a case in point, and the cage-like enclosure and semi-open customs shed at Dover is little better. Folkestone is to be improved and it is to be hoped that the occasion will be used to make it a more suitable portal in which to offer to visitors a first welcome to our country. The effect of luxurious appointment on board the steamer is lost if the traveller, perhaps still suffering from the effects of sea sickness, is expected to traverse open wharf, or stand in an exposed customs shed. Our climate is a factor that should be taken into account ashore as well as afloat, and considerations not only of comfort but of health demand improvement in this respect.

* * * *

The Ideal Rail—Hard or Tough?

THE description on page 955 of this issue of the most drastic heat treatment that has yet been applied to rails, with a view to producing a running surface better fitted than previously to sustain abrasive wear and therefore to give longer life, prompts some reflections which are of the first importance to rail users. There are two paths along which this ideal may be pursued; one is to make the steel so hard that the abrasive action of the moving load will have but little effect on it, and the other is to make the steel so tough that it will withstand deformation without damage to its structure. The desired physical characteristics are attainable either by alloying or by heat treatment, or by a combination of both; mere chemical hardness will affect the entire cross section of the rail, but heat treatment can be applied to the wearing portion of the head only. The inherent risk of chemical hardness is that of brittleness, and of this fact it would not be possible to give a more telling illustration than the transverse fissure which has proved so troublesome in America, attributable in the first instance to the extremely high combinations of carbon and manganese that have been and still are commonly used in that country—in their turn resulting from the demand for a rail which will withstand the destructive effects of axle-loads far greater than those common in Europe.

On the mainland of Europe recent developments have been in the direction of a rail-head even harder than the American, but with a web and foot of considerably softer steel, thus offering resistance to fracture in those zones of the rail section that are chiefly subjected to tension between the rail supports. This hard head is produced either by making a compound ingot, in which the portion of the ingot that is to form the head is cast from alloy steel, and the remainder from a mild steel, or by a severe quenching of the head of a rail of more normal composition. But with the American experience in mind, it is significant that the chemical composition of the martensitic rails which form the subject of the article referred to above, and which, even from the early days of this treatment, were relatively low in carbon, has now been reduced to an even lower carbon content of 0·32 to 0·36 per cent., coupled with 0·70 to 0·90 per cent. of manganese and the same limits of silicon, so that the risk may be avoided of producing, during the quenching treatment, the shatter-cracking of the rail-head that may grow under traffic to dangerous transverse fissures. The result is that although the martensitic rails have a hardness on the running surface of round about 400 Brinell, the hardness of the foot is roughly one-half that figure. In the compound rails now being rolled on the Continent the foot is still softer. Owing to the relatively large bearing area between the feet of flat-bottom rails and their soleplates, little trouble is likely to arise from indentation of rails of this composition by their supports, whereas in Great Britain, chair-galling—owing to the smaller surfaces of rail and chair in contact—might with similar steel make replacement of the rails necessary so early as to nullify any advantage derived from the hardening of the head.

The principal controlling factor in British rail manufacture hitherto, however, has been the narrow limitations of the B.E.S.A. rail specification, and in particular the severity of the falling weight test, which relatively to weight of rail section is probably the most severe in the world. That the end has justified the means used finds ample confirmation in the statistics of rail failures in various countries which are published from time to time, and which show the British record to be considerably the best of any, notwithstanding the density of rail traffic in this country. The fact that all British rails of alloy or heat-treated qualities must sustain the same impact tests as ordinary rails has ruled out the exceptionally hard rail as a solution of the wear problem, and has caused the principal emphasis in this country to be laid on toughness rather than mere hardness. A surface hardness equal to that of the Continental martensitic steel, with a Brinell figure exceeding 400 in the wearing portion of the rail, can be produced here with the Sandberg treatment plant, and experimentally has been produced, but in service the rails concerned displayed no better wearing ability than other rails laid adjacent which had undergone the normal sorbitic treatment. As set out in the review of modern British rail manufacture developments, which was read as a paper at the recent International Rail Congress and summarised in our issue of September 30, the regulated sorbitic treatment is giving, in conjunction with tensile strengths of 60 to 64 tons per sq. in., and high yield points of 50 to 54 tons per sq. in., steadily increasing elongations and reductions of area, the former, with basic open hearth steel, frequently from 16 to 18 per cent., and the latter from 35 to 45 per cent., which speak well for the increasing toughness of the steel. At the same time the treatment of steel of standard composition ensures unimpaired resistance to chair indentation, and obviates the production of a special steel for treatment purposes. Above all, the British ideal of a perfectly safe rail still remains the primary consideration.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

A Square Deal for the Railways

The British Railway Stockholders Union, Limited,
25, Victoria Street, London, S.W.1
November 24

To the Editor of The Railway Gazette

Sir,—The action of the chairmen and general managers of our railways in making formal application for the removal of the restrictions which apply to them but which do not apply to their competitors constitutes a step the significance of which will not fail to be appreciated throughout the country. There have been occasions in the past when the railway companies have felt compelled to direct attention to their grievances in the interests of their stockholders. But this year, for the first time, there has arisen a situation so serious as to warrant a demand for action in the interests of the nation itself. Naturally, as stockholders we are deeply concerned in the result. But we accept the decision of our leaders, and whatever our competitors may do or say, we of this union propose to fight this issue solely on the lines of the national requirements.

Whether the ultimate solution will be that for which the companies are asking or will take some other form no one can say, but we submit that the interests of commerce and of the population of this country in peace and, more especially, in times of emergency demand that our railways shall be enabled to maintain that standard of efficiency with which they are associated throughout the world. Thus the issue, as we see it, is of interest to every firm, to every man and to every woman in Great Britain. By intensive work, compressed into a few hours, this union succeeded in circulating to its members many thousands of copies of the actual memorandum submitted by the railways to the Minister of Transport. In each case this memorandum was accompanied by a covering note the concluding sentence of which adequately sums up our attitude towards it. The sentence I refer to and which was, of course, posted only to stockholders who are members of this union, was as follows: "The fight upon which you are entering is not your battle alone, it is a fight for the railway industry and all that the industry means to this country."

May I conclude with an expression of the hope that the press of Britain will use its great influence to secure a discussion of this question on the basis of the interests of the country.

I am, Sir,
Your obedient servant,
ASHLEY BROWN
(General Secretary)

Cross-Channel Services

London & North Eastern Railway,
Liverpool Street Station, E.C.2
November 23

To the Editor of The Railway Gazette

Sir,—In your issue of November 18 you publish extracts from a paper recently read by Mr. A. C. Hardy before the Institute of Transport on "Cross-Channel Services from the Passenger Viewpoint." In the subsequent discussion, Mr. Hardy's comments, particularly regarding railway policy in the matter of cross-channel services, were answered.

Speaking of ideals, Mr. Hardy said: "At present they are more than reached on some services and hardly approached on others. In general, the railway companies are the offenders." He contended that in recent years there had been lack of foresight when new tonnages had been built for the railway services. One reply to these observations is that the three Harwich/Hook of Holland steamers which were laid down by the L.N.E.R. Company ten years ago are still considered to be the finest type of vessel, both in design and general layout, for the particular service for which they were built. Mr. Hardy also stated what he considered to be the essentials for a night service. Every one of these essentials was provided on these vessels. In the first class accommodation of the *Vienna*, *Prague*, and *Amsterdam*, there are a large number of single-berth cabins and no cabin has more than two berths. In addition, there are four de luxe suites, each provided with twin beds, with private toilet to each cabin and a bath-room between each pair of cabins. Every cabin throughout the ship is fitted with hot and cold water, and with a dual supply system of hot and cold air, regulated by the passenger at will. The berths are fitted with the latest type of mattress, reading-lamps are provided in all chargeable cabins, and the public rooms are large and airy. Moreover, these ships have a commodious embarkation hall, entered direct from doors in the ship's sides, thus obviating the objection Mr. Hardy rightly stresses "of pushing along wind-swept and slippery decks." The statement "that each time the railway company lays down a fleet of new cross-channel ships, the plans of the previous vessel are taken down, the dust blown off them and a few apologetic modifications made" must, therefore, definitely be refuted.

As to Mr. Hardy's *penchant* for reducing deck space and generally closing passengers in on both day and night vessels: I fully endorse the remarks of one of the Southern Company's officers during the debate when he stated that even on the night routes many passengers like "to have a blow" and a walk round the deck, and that, in fact, during the summer season the stewards have the utmost difficulty in getting some passengers to retire to bed.

In conclusion, whilst there was much in Mr. Hardy's paper which provides food for reflection, he appears to have overlooked the fact that what may be suitable and desirable for one service does not necessarily do for another.

Yours faithfully,
A. L. GIBSON,
Continental Traffic Manager

Making the Best of Difficulties

Barnet, Herts
November 29

To the Editor of The Railway Gazette

Sir,—Four days after the unfortunate fire that put out of action the signalbox on the arrival side at Paddington, I had occasion to travel up from Chippenham, and, as from Swindon my train was the Cheltenham Flyer, with its 71·4 m.p.h. schedule, a late arrival seemed inevitable. From the start, however, it was clear that the driver intended, if possible, to get some time in hand in order to compensate for loss of time inwards from Westbourne Park while running through the hand-signalled area. This he did with such effect that we maintained an average speed of 85·7 m.p.h. over the 55·4 miles from Shrivenham to Langley, and despite a signal check at West Drayton, passed Ealing Broadway, 71·6 miles from the start, in 53 min. 53 sec., a clear 5 min. early. Then followed a bad signal check at Acton, a dead stand just beyond Westbourne Park, and a check to walking pace at Subway Junction, notwithstanding which we came to a stand in Paddington dead on time at 5 p.m., the actual time for the 77·3 miles being 65 min. 5 sec. That it should have been possible to work the fastest train on the G.W.R. punctually into the terminus only four days after such a casualty as this signalbox fire, with all the difficult improvised working that it has rendered necessary, struck me as reflecting immense credit on all concerned. It is not without interest that the driver concerned was F. W. Street, of Old Oak Common shed, who has been responsible for many fine runs on the principal Great Western expresses, and who on this occasion was making his last run on the Cheltenham Flyer before his retirement; the enterprise of this notable journey is worthy of warm commendation. *O si sic omnes!*

Yours faithfully,
CECIL J. ALLEN

THE SCRAP HEAP

A model locomotive and buffet car made from oddments such as rubber heels, jampot covers, and a rolling pin, were among the exhibits at the G.W.R. Arts & Crafts Exhibition held at Paddington from November 21-26. It was the work of a Leamington guard, and produced its own sound effects.

* * *

RAILWAY FINANCE

From a market report in *The Financial Times*:—

G. W. Kings were in request and rose from 6s. to 6s. 9d.

Borrowing the language of the financial press, the logical sequel would seem to be:—" Southern *King Arthurs*, however, failed to respond and closed on a subdued note. *Georges* were in little demand, while *Pacifics* were sluggish. *Compounds* started briskly on a simple basis, but there was little rally towards the end of the day. Operators had foreseen a rush for *Mikados*, and as expected these got away in good style at opening; control operations were very apparent after lunch, however, and not much business was done in this direction. *Castles* were firm at the outset, flagged a little on a fall in coals, and then got going well towards the close. There was some very brisk dealing in the " Street " in this category."

But unfortunately " G. W. Kings " is merely the name given in the metaphorical language of the stockbroker to the shares of Geo. W. King Limited.

* * *

A railway strike which presented many ugly features was that which occurred in April, 1867, when the engine drivers and firemen on the North Eastern Railway suddenly suspended their labour, resulting in a complete dislocation of traffic between Normanton and Berwick, and between Newcastle and Carlisle. In all 1,500 men were affected, but the strike failed through the energy of the directors and the want of a good cause by the men. The strike had, however, its repercussions on other lines, but owing to a spirit of conciliation on the part of the Midland Railway directorate a serious spread of the strike was averted on that system. To commemorate the satisfactory arrangement arrived at, a poem composed by a Derby engine driver, G. Benfield, was circulated as a broadsheet. The poet, after many complimentary references to his locomotive, wound up with some reflections upon the blessing of the 10-hr. day for enginemen, which the agreement with the directors had conceded. They were introduced, however, with the following somewhat lugubrious picture of earlier conditions:—

And many a strong and lusty youth
By wet and sad exposure
In a few short years, with bitter tears,
Has filled a dark enclosure.

The ten-hour day increased the engine driver's chance of survival, and was particularly appreciated when:—

. . . the frost king comes with garment white
And covers all Nature o'er
And the frozen stream in the sun doth gleam,
And the rill is set to the core.
'Tis then I feel convinced by *cold*
Ten hours a day is plenty,
As much as He would have me do
Who to this world hath sent me.

A picture of a contemporary locomotive at the head of the broadsheet, showing it without protection of any kind for the crew, would convince the most sceptical modern reader that the poet did not exaggerate the rigours of his calling.

* * *

I would rather be a monkey trying to eat a nut in a high wind than a man trying to eat lunch on some of our railways. How rightly the carriages are called rolling stock!—*From a letter to the " Daily Express."*

One Hundred Years Ago

Extracts from the December, 1838, issue of " The Railway Magazine " (afterwards " Herapath's Railway Journal ") and the oldest constituent of THE RAILWAY GAZETTE

North Union Railway.—This line, which, as we mentioned in our last, opened October 21, we are glad to hear is doing very well. Their number of passengers we are informed is about 1,400 per day.

North Trunk Railway.—This line is proposed to commence at Islington, passing from thence between Highgate and Hampstead, by Finchley, Barnet, St. Alban's, and Bedford, between Higham Ferrers and Wellingborough, and thence to Leicester, there to join the Midland Railway. This route would form a portion of a direct line from London to Edinburgh.—*Nottingham Journal*.

South-Eastern Dover Railway.—Dover and Calais being the great outlets of England and France, it was natural that a line to the former port would be the first object of English railway enterprise. Accordingly, as early as 1833, the project of constructing a railway between London and Dover was formed. The first line projected was *via* Gravesend, but this, on deliberate consideration, the directors inform us, was abandoned. Another was by Croydon, Oxted, Tonbridge, and on to Ashford, Folkestone, and Dover; for which, after a severe Parliamentary struggle with the North Kent and Central Kent Railways, an Act was obtained June 21, 1836. After the passing of the Act, Mr. Cubitt, who is now executing the work, was appointed chief engineer to the company. Shortly afterwards, it was intended to fix the London terminus near the Obelisk in St. George's-fields, and to meet the original line at Croydon; but this has not been carried into effect, and no alteration of the entrance into London over the Croydon and Greenwich Railways has been made.

Berlin and Potsdam Railway.—The whole of this line was opened, for the first time, on October 27. The trains, with 280 persons, and drawn by two locomotive engines, set out at 12 o'clock, and reached Potsdam in 41 minutes. After the company had taken some refreshments, the train returned in 38½ minutes.—*Bristol Gazette*.

Day and Night Signals for Railroads.—We have seen the model of a very simple and effectual instrument for informing the engineman of the state of the switches on railways, and consequently for warning him of any danger from their position, invented and patented by Dr. Crouch, of Birmingham. It consists of two circles, bisecting each other vertically at right angles, surmounted by a lantern with four glass sides, red and green, the opposite pair being of one colour, and the other pair of the other. The opposite sides also of each circle are painted the same colour, but the colours of the two circles are different. This instrument is fixed on one side of the road, on the top of an upright rod, which is connected with the switch at bottom in such a way that it turns one quarter round with the entire opening or shutting of the switch. The circles are used for the day, and the lantern for the night. When the switch is right, the green face, suppose, of the lantern and circle, presents itself to the line of road, and when wrong another colour, red, for instance. Of course the engineman seeing this, proceeds or stops as safety or danger is indicated. So also if the colours are mixed—showing that the switches are only partially turned—the man knows it is not safe to proceed, and, having timely warning from a long distance, stops. Our readers will perceive that this is a very simple process, and that the only failure of it must happen in fogs. We understand the Birmingham Company intend to try it.

Dresden and Leipsic Railroad.—On November 3 nearly 6 miles more of this line was opened. It now extends from Dahlen to Oschartz.—*Morning Chronicle*.

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

INDIA

Railway Accident at Chandausi

At about 8.30 p.m. on November 5, in Chandausi station yard, on the Moradabad Division of the East Indian Railway, a collision occurred between a goods train and a passenger train, resulting in slight injuries to a passenger and four railway employees. The passenger engine and five empty wagons attached to the goods train were derailed, and a third class bogie coach was slightly damaged.

Notable Hindu Festival

The lunar eclipse occurring on Monday, November 7, and coinciding with a notable festival of the Lord Krishna, provides a special occasion, known as the *Churamoni Yoga,* when a dip in the sacred waters of the Ganges is endowed with exceptional sanctity; the *Churamoni Joga* last occurred about 27 years ago. On the present occasion, thousands of devout Hindus have come to Calcutta to bathe in the Ganges during the eclipse, and all the railways serving Calcutta ran special trains. The Eastern Bengal Railway in particular put on a large number of specials for this festival, and these were crowded to capacity.

Civil Aviation in India

The Government report on the progress of civil aviation in India during 1937 shows that the opening of the Bombay—Kathiawar and Bombay—Delhi services raised the length of air routes from 6,438 miles in 1936 to 8,325 miles in 1937. The internal regular lines flew 622,193 miles in 1937 as compared with 496,539 miles in the previous year. The number of passengers also rose from 349 to 1,178.

The Director-General of Posts and Telegraphs recently stated that the Government had no intention of launching an air service between Bombay and Calcutta for the transport of mails. He added that it was impossible for Government or anybody else to operate air services for the carriage of mails alone. Though Government would consider the question of utilising, for the transport of mails, the services of any privately-operated air route between Bombay and Calcutta, the success of such a service must primarily depend on the passenger and other public traffic it was able to secure.

Railway Surveys

For some years past, expenditure on surveys has been kept down to the minimum mainly because the prospect of newly-projected lines proving remunerative under present-day conditions appeared remote. Survey work was, therefore, confined to a few areas which were devoid of railway communication or where a railway extension appeared to hold out hopes of a reasonable return on capital outlay.

The most notable among those sanctioned during 1936-37 were an engineering reconnaissance and a traffic survey for an extension of the Bankura—Damudar River Railway from Sehara Bazar to Burdwan, with the object of improving the financial position of the existing line, and a final location survey for a metre gauge railway from Khadro, to serve the sugar industries at Pritamabad. The North Western Railway administration also undertook the survey and investigation of a line from Jammu to Akhnoor, about 20 miles in length, on behalf of the Kashmir Government who had a scheme for transporting timber and coal by rail from Akhnoor and to make that station an industrial centre for the south-western part of the State.

A certain amount of work was also done in connection with the re-examination of the traffic and financial prospects of projects which had been surveyed in previous years, with a view to bring them up to date and so enable the authorities to decide whether or no expenditure on further investigation was justified. As a result of such examination, several projects were finally dropped, notably the Harpalpur—Silon — Damoh, Harpalpur — Silon — Katni, and the Muttra—Aligarh projects.

SOUTH AFRICA

East London Improvements

A sum of £54,000 is to be spent on alterations and improvements to East London station and in the provision of a new block of offices for the System Manager and his staff. Of this amount £15,000 has been provided in the capital and betterment estimates of the current financial year. In addition to this, £55,000 will be spent on a scheme for additions and work in the railway yard, including the laying of new tracks, signalling, the filling in and terracing of the lower levels, and a 90-ft. electrically-driven turntable. A new locomotive depôt scheme is being proceeded with at the moment. It involves the erection of a 1,000-ton steel elevated coal bunker, engine shed, drop pits, repair shops, ash-handling plant, and water recovery plant. A comprehensive remodelling scheme for the East London workshops has been approved by the Chief Mechanical Engineer, and £50,000 has been provided for the building of a new erecting shop conforming to the general scheme.

Music on Trains

An initial experiment, limited to gramophone records, has been carried out on the Union Limited express from Johannesburg to Cape Town. Further tests will be conducted with a view to providing passengers with radio entertainment. The difficulty in the past has been electrical interference while the trains were in motion, but experts consider that this can be eradicated. If the difficulty can be overcome the scheme will be extended to the principal mail trains. The gramophone was operated from the bar, and loud speakers were fixed in the dining and observation cars.

Tourism

At the annual meeting of the Johannesburg Publicity Association held recently, the Chairman stated that in the three years 1935 to 1937 the Union had attracted 86,134 visitors who were conservatively estimated to have spent over £5,000,000 in the country. Publicity expenditure during the same period was approximately £125,000. The Chairman laid particular stress on the importance of seeing that the treatment of tourists throughout their stay was "good and agreeable." If that were done they would become potent advertising agents for South Africa. The association welcomed the recent establishment of the Hotel Association of Southern Africa with headquarters in Johannesburg. It was hoped that, in the near future, there would be established a permanent statutory hotel licensing authority in the Union equipped with a permanent inspectorate, devoting its efforts continuously and progressively to the task of hotel betterment and expansion, and serving as an advisory board to the Government on all matters affecting the hotel industry.

NEW SOUTH WALES

Tonnage Increases

Peak tonnage on the Government Railways was carried in 1926-1927, when 17,224,894 tons of goods and livestock were conveyed. In 1932 traffic had dropped to 10,211,322 tons, but in that year a change was made in the administration of the railways, the present Commissioner taking office.

Assisted by the better economic conditions which have prevailed since that time and by origination of a programme embracing personal contact with possible consignors, acceleration of services, introduction of telephone train control, and remodelling and extension of goods handling facilities, the Commissioner has been enabled to increase tonnage as shown below :

	Tons of goods and livestock conveyed
1933	11,147,866
1935	13,018,620
1937	14,684,885
1938	16,480,379

The figure for last year exceeds those for all previous years, save 1926-1927.

New Goods Rolling Stock

Consequent upon the heavier tonnage offering, it was necessary to inaugurate a programme of rolling stock construction. New louvred vans, refrigerator

vans, sheep vans, and open goods wagons have been ordered from contractors. Delivery has been taken in the last 12 months of 100 goods wagons, 20 sheep vans, 50 louvred vans, and 30 refrigerator vans, and additional stock under order includes 500 goods wagons, 100 sheep vans, and 26 steel flat wagons.

UNITED STATES

Proof of Greater Operating Efficiency

Despite the fact that gross revenues of the railways in September were £8,000,000 less than in September, 1937, net railway operating income (after meeting taxes but before payment of interest on debt) totalled £10,000,000, as compared with £12,000,000 in September last year, a clear proof that the railways have got their expenses under stringent control. For the first nine months of the year, net railway operating income has totalled only £41,000,000, reflecting the heavy losses of the earlier months of the year. However, freight car loadings are concurrently averaging only from 10 to 15 per cent. under last year's totals, in comparison with the 30 per cent. or more declines of earlier in the year, an encouraging sign. General business trends appear to be upward, a fact which undoubtedly swayed the emergency board in its wage decision.

Report on Modern Trains

The engineering firm of Coverdale & Colpitts, 120, Broadway, New York, has published in pamphlet form its study of the results achieved by the American railways from the operation of their new lightweight, streamlined trains. Operating costs of the new trains are contrasted with the older trains they replaced, and comparative traffic earnings are also given for each of the major streamline trains. Some of the trains are disclosed as remarkable money-makers. For instance, in the year ended June 30 last, five City diesel streamliners of the Union Pacific brought in over £600,000 of gross revenue and carried more than £300,000 of that revenue to net. Their net earnings were over 4s. a train-mile.

The Southern Pacific Daylight steam streamliners are disclosed as netting almost 13s. a train-mile (out of a gross of 18s. 6d.). The Burlington Zephyrs have been netting over 5s. a mile, and the Milwaukee's steam-drawn Hiawatha has been earning even fractionally more than the 13s. a mile garnered by the S.P. Daylights.

ARGENTINA

British Engineering and Transport Centre: Annual Dinner

The eighth Annual Dinner of the combined Centre of British Engineering and Transport Institutions was held at the Plaza Hotel, Buenos Aires, on October 7; the Chairman of the Centre, Mr. C. R. S. Harris, Director-General, B.A.G.S. and B.A.W.R., presided. About 140 were present, and the special guests of the evening were the British Ambassador, Sir Esmond Ovey, K.C.M.G., M.V.O., Messrs. Stanley Irving, C.M.G., Commercial Counsellor to the Embassy, and R. M. Kohan, the British Consul-General; Engineer Arturo Noni, Director-General of Argentine Railways, Engineer Luís V. Mignone, Vice-President of the National Centre of Argentine Engineers, and Dr. E. Bendisch, Chairman of the German Society of Engineers.

The toast of " The Centre " was proposed by the British Consul-General, and replied to by Mr. Harris, who mentioned that the Centre was now ten years old. He referred to the friendly relations existing between the British Engineering and Transport Centre and similar local institutions, and thanked the British Ambassador, for honouring them by attending the dinner.

The toast of " The Guests " was proposed by Mr. J. G. Mayne, Managing Director, Percy Grant & Co. Ltd., and responded to by Sir Esmond Ovey. Engineers Noni and Mignone and Dr. Bendisch also spoke briefly, the keynote of their remarks being the goodwill and friendly relations existing between Argentine, British, and German engineers.

Increased Fruit Exports

The cultivation of Argentine fruit is rapidly developing into one of the country's staple industries, and the exportation of fresh fruit of many varieties to Europe and the United States has during the last year or two attained to important proportions. Figures issued by the Ministry of Agriculture show that 2,213,372 boxes, totalling 32,879,227 kg. of fruit, were exported during the first nine months of 1938, as compared with 2,041,305 boxes (29,272,211 kg.) during the corresponding period of 1937, an increase of 172,067 boxes, or 3,607,016 kg. or 12·32 per cent. Classified according to variety, the exports during the period referred to were as follow :—

	kg.
Pears	18,229,907
Grapes	8,364,457
Apples	4,005,300
Grape-fruit...	727,251
Peaches	680,974
Quinces	373,170
Melons	236,307

CHILE

Proposed State Railway Extension to Argentina

Telegraphic press advices from Santiago state that the Ministry of Development has arranged for a survey to be carried out with a view to the possibility of extending the existing State Railway line from Paloma to Juntas, a distance of 18 km., in the Ovalle district, to Carene, and eventually to the Argentine city of San Juan. The report is to include an estimate of the probable cost of the scheme, and the prospects which such an extension offers to the development of the agricultural and mineral traffic of this region.

Funds for Arica—LaPaz Railway

According to information from Santiago, the administration of the Chilean section of the above railway has been authorised to negotiate a loan with local banks for the sum of 2,000,000 Chilean pesos, to be expended on improving the services.

SPAIN

Madrid and Barcelona Undergrounds Nationalised

When the main-line railways were finally taken over by the Spanish Government and placed under the management of the National Railway Council, under the Decree of October 21, 1937, the underground systems of Madrid and Barcelona, and other railways of an exceptional nature, were excluded from the arrangement. Now an Order of the Ministry of Communications and Transport, dated in Barcelona October 21, and published in the *Gazette* of the Republic of October 24, provides for the inclusion in the national system of the Metropolitano of Madrid, and the Gran Metropolitano and Metropolitano Transversal of Barcelona, and these lines will henceforward be operated by the National Railway Council.

SWITZERLAND

Flèche du Jura Railcar

This new high-speed railcar, and the unusual conditions under which it will be taken over by the Federal Railways, were briefly referred to in the August 6, 1937, issue of THE RAILWAY GAZETTE (page 222). It will be recalled that the purchase of the car was made possible by private initiative and by gifts and subsidies from various bodies and firms in the districts concerned in the Cantons of Neuchâtel and Berne, in order to improve rail services on the routes forming the Bienne—Chaux-de-Fonds—Neuchâtel triangle, in the Jura range. It had been hoped to place the new railcar in service with the introduction of the summer timetable in May last, but it has only just been delivered, and its inaugural trip will take place on November 24. In the meantime, increased services have been provided on the lines in question since last year by an ordinary Federal railcar.

The Flèche du Jura incorporates a number of improvements on the Flèche Rouge type, and is designed to haul trailers. It attained speeds up to 120 km. (74½ miles) p.h. during its trials. In the course of further trial trips with a full complement of passengers, free travel is being granted to schoolchildren, nurses, inmates of charitable institutions, and the unemployed of the districts involved.

AN EARLY ACCOUNT OF RAILWAY CONSTRUCTION

IN the closing years of the eighteenth century there was quite a large number of short railways in various parts of the country in connection with coalmines, ironworks, and so forth. Little seems to have been known of them, however, outside the immediate districts in which they were an accepted feature, and the diaries of travellers to such parts often included mention of railways as sights worthy of attention. A notable example is to be found in Archdeacon William Coxe's volume "A Historical Tour Through Monmouthshire" which was first published in 1801. He was an extensive traveller and the author of some 27 works, many of them topographical, which show him to have been a keen observer. The material for the Monmouthshire volume was collected in the course of three visits in company with Sir Richard Hoare which he made in 1798 and 1799; in all they covered some 1,500 miles.

"In the vicinity of Blaenavon," he says at page 202. "we observed the process of making a rail road, so called because it is formed by a kind of frame with iron rails, or bars, laid lengthways, and fastened or cramped by means of cross bars. The ground being excavated, about six feet in breadth, and two in depth, is strewed over with broken pieces of stone, and the frame laid down; it is composed of rails, sleepers, or cross bars, and under sleepers. The rail is a bar of cast iron, four feet in length, three inches thick, and one and a half broad; its extremities are respectively concave and convex, or in other words are morticed and tenanted into each other, and fastened at the ends by two wooden pegs to a cross bar called the sleeper. This sleeper was originally of iron, but experience having shown that iron was liable to snap or bend, it is now made of wood, which is considerably cheaper, and requires less repair. Under each extremity of the sleeper is a square piece of wood, called the under sleeper, to which it is attached by a peg. The frame being thus laid down and filled with stones, gravel, and earth, the iron rails form a ridge above the surface, over which the wheels of the cars glide by means of iron grooved rims three inches and a half broad.

"This is the general structure of the road when carried in a strait [*sic*] line; at the junction of two roads, and to facilitate the passage of two cars in opposite directions, moveable rails, called turn rails, are occasionally used, which are fastened with screws instead of pegs, and may be pushed sideways.

"The level of the ground is taken with great exactness, and the declivity is in general so gentle as to be almost imperceptible*: the road, sometimes conveyed in a strait line, sometimes winding round the sides of precipices, is a picturesque object, and the cars, filled with coals or iron, and gliding along occasionally without horses, impress the traveller, who is unaccustomed to such spectacles, with pleasing astonishment. The expense of forming these roads is very considerable, varying according to the nature of the ground, and the difficulty or facility of procuring proper materials; it is seldom less than a thousand pounds per mile, and sometimes exceeds that sum.

"The cars, from the solidity of their structure, and the quantity of iron used in the axle tree and wheels, when loaded weigh not less than three tons and a half; they are drawn by a single horse, and the driver stands on a kind of footboard behind, and can instantaneously stop the car by means of a lever and a drop, which falls between the wheels, and suspends their motion. In places where the declivity is more rapid than usual, the horse is taken out, and the car impelled forward by its own weight."

It has been suggested that the railway which Archdeacon Coxe saw in the making was the 5-mile line between the Blaenavon ironworks and the canal head at Pontnewynydd, which was built by the Monmouthshire Canal Navigation Company under its Act of June 3, 1792. This line, however, had been constructed some years before Coxe's visit and it is probable that what he saw was the main line in full working order, and some siding or branch being built or repaired. The precise date of opening of the Blaenavon-Pontnewynydd line—called the Blaenavon Railroad—is uncertain. MacDermot gives the year as 1795 (the same as the canal), but Dendy Marshall says the line was finished in 1793.

* The perpendicular fall of the ground is commonly no more than an inch in a yard, and scarcely ever more than three inches

Nickel Alloys Save Weight in New American Trains

IN our issue of September 9 last we described and illustrated the new Broadway and Twentieth Century Limited trains recently placed in service by the Pennsylvania and the New York Central Railroads. Readers will remember that considerable savings in weight have been effected in these trains largely through the use of high-strength alloy steels. We have recently received additional information concerning the materials used, and they supply good evidence of the value of modern lightweight materials in railway construction.

The truck frames and bolsters under all the Pullman cars are cast in 2¼ per cent. nickel-steel and were supplied by the General Steel Castings Company. The car couplers are a production of the National Malleable and Steel Castings Company; they are of Tight-Lok design and are made from a cast nickel-vanadium steel. The Republic Steel Corporation's Double Strength, a copper-nickel steel, was used for a number of the car roofs, which are of welded construction. Stainless chromium-nickel steel was used for skirts on the Pullmans, also for a large variety of decorative parts in the roomettes, buffet, and observation cars. Similar stainless steel was also extensively used in the construction of numerous accessories in the dining car kitchens. Monel, a nickel-copper alloy, was found to be of particular value for buffet finish, refrigerator facings and linings, ice wells, sinks and bar trim.

In the streamlined Hudson type steam locomotives used on the Twentieth Century Limited train, the boilers are of 2 per cent. nickel-steel designed to operate at a pressure of 275 lb. per sq. in. The driving rods and running gear were forged from nickel alloy steel quenched and tempered, and the use of this material resulted in a substantial saving in weight with consequent reduction of wear and tear on both the locomotive and the permanent way. Axles and crank-pins are mounted on Timken roller bearings, which are also made of nickel-chromium steel.

XUM

TAIL LAMPS

Some suggestions for avoiding the pitfalls that may lead to collisions, whether electric or oil lamps provide "the last line of defence"

By H. C. TOWERS, A.M.I.E.E.

IN connection with several accidents that have occurred recently, reference has been made by the inspecting officers, and the technical press, to the importance of the tail lamp. The tail lamp is "the last line of defence," as it has well been called, protecting a standing train from a rear collision. It is, in reality, a signal with no overlap but with a sighting distance dependent on curves, weather conditions, and its own efficiency. It is almost impossible to institute remedial measures to improve the first two conditions, but there would appear room for improving the third.

With electric tail lamps a very efficient indication is displayed. On the electric services of some railways the indication is duplicated, so that in the event of the train lighting failing an emergency battery supply, also used for lighting the coaches, illuminates the emergency tail lamp. On some railways, only one lens is used, illuminated by two bulbs, one being energised from the main supply and the other from the emergency supply. In these cases it is essential to see that the emergency supply is available when required.

An instance occurred abroad last year of a collision caused by the emergency tail lamps not being in operation. An electric train was coasting past a home signal when all the lights failed. The motorman decided to wait until he stopped in the station before making an examination. When the train stopped the guard took his tri-colour signal lamp and went to the driver with the idea of showing him a light while he changed the fuses. Several fuses blew, and then it was decided that the train could not continue in service and would have to be shunted off. The signalling at this station was semi-automatic and at the time of the accident an illuminated "A" sign was exhibited at the home signal, indicating that the Stop-and-Proceed rule was in force. A following train waited the prescribed two minutes, proceeded towards the station, and collided with the stationary train.

This was another case of the failure of the human element. The stationmaster could have prevented the accident, had he remembered that automatic working was in operation, by replacing the king lever and converting the home signal to an absolute stop signal. The guard should have seen that the emergency lighting was out and he could have taken steps to protect his train by the use of the tri-colour signal lamps. The driver of the following train could, in all probability, have prevented the collision had he seen a red light at the end of the train. The subsequent inquiry revealed that it was doubtful if the battery switch had been closed when the train was taken out of the stabling sidings at the beginning of the trip.

This type of accident emphasises the necessity of providing means to make it compulsory for a motorman to close his emergency lighting switch. It should not be possible to start the train when the switch is open, but the circuit must be interlocked with the main train lighting system so that the interlocking feature is cut out during daylight. In addition to the electric emergency tail lamp, it would appear that "the last line of defence" should be an oil lamp. Interlocking features will ensure that lamps are connected to the emergency supply but there still remains the possibility of a fractured filament. Some objections raised against the oil tail lamp are that it is messy and costly to maintain. It is required to be transferred from one end of the train to the other at terminal stations and on this account the efficiency of its indication becomes doubtful. This can be overcome by instituting supervision which will compel the staff to take a more intelligent interest in the lamps, seeing that they are kept clean, wicks trimmed and burning at their proper height. Whatever objections can be raised against the oil tail lamp, there are several instances on record where, had it been provided, collisions would have been either prevented or their results considerably mitigated.

Hitherto, the red light has always been accepted as the colour meaning "stop." There can be no possibility of a single red tail lamp being mistaken for a signal on open sections where the signal aspects are displayed at a considerable height above rail level. In tunnel sections and brick cuttings there is the possibility of signal aspects being located at approximately the same height as the tail light. A case has happened recently where the driver was temporarily deluded into thinking that the tail lamp of a stationary train was a signal, and being puzzled by its position he lost a few precious seconds before the brakes were applied. A tail light of a totally different colour would probably prevent such a delusion, but as the signalling system has claimed red, yellow and green there remains only purple, the colour used for danger several decades ago.

The colour of the rear portion of trains is perhaps a subject worthy of some consideration. A train painted the same colour as the surroundings is not so easy to distinguish, either by day or under the head lamp, as one of a more contrasting colour. On some railways abroad signal red is used and on the straight road this can be seen for several miles and is easily picked up by the light of engine headlamps at night.

A Phœnix in Harness

A useful member of the County Donegal Railway stud of motive vehicles is a diesel tractor called *Phœnix II*, so named because it rose from the ashes of a derelict experimental steam locomotive which was bought by the company and rebuilt with a diesel engine. Mr. John Coltman in a paper entitled "Recent Railway Developments in Eire," presented to the Institution of Mechanical Engineers (Graduates Section, North Western Branch), gave some interesting information on the working of this unit. It begins its day by collecting ballast wagons from the pit near the summit of the line to Donegal; these are brought to the headquarters at Stranorlar, whence they are distributed by other services as required. *Phœnix II* then shunts the wagons there, takes a mixed train to Strabane (the junction for the Great Northern Railway), shunting at several intermediate stations on the way. The next duty is shunting at the Customs station on the border, after which it takes a mixed train and shunts as needed at the intermediate stations, eventually returning to Stranorlar, where it marshals trucks for the steam trains. Practically sixty minutes' useful work is thus put into every hour of the unit's working day.

THE PRODUCTION OF MARTENSITIC RAILS

A description of the methods used by the Eisenwerk Gesellschaft Maximilianshütte, of Sulzbach-Rosenberg, Bavaria, in the production of rails with a surface hardness of over 400 Brinell, and of their physical characteristics and wearing capacity

DURING the two decades which have succeeded the war of 1914-1918, considerable progress has been made in Continental countries in the technique of rail manufacture, as is evident to those who have studied the proceedings of the International Rail Congresses held in 1928, 1933, 1936, and the present year. In particular much attention has been paid to the production of reliable steels to meet track conditions where the wear of rails is exceptionally heavy. The principal developments in this direction have been in the realm of alloy steels, in the fusion of hard alloys with rail steel of normal quality by special methods of casting ingots in which both qualities are combined (the hard quality for the head of the rail and the normal steel for the web and foot), the production in electric furnaces of pearlitic manganese steel, and, lastly, by heat-treatments.

It is significant of the extent of this development that as far back as 1933 the Swiss Federal Railways, which on some main lines, such as the Gotthard, carrying heavy traffic over steep gradients with almost unbroken sharp curvature, have extremely severe rail wear conditions, should have been specifying steels with as great a surface hardness as 380 to 450 Brinell on the head for such places. Compound rails were required to show a hardness of 300 to 400 in the alloyed head, but only 140 to 170 in the foot, and electrically-refined manganese steels not less than 270 Brinell. The chemical compositions required in these three qualities were carbon from 0·40 to 0·45 per cent. and manganese from 0·9 to 1·0 per cent. in the heat-treated rails, carbon about 0·55 per cent. and manganese about 1·85 per cent. in the manganese rails, and in the compound rails 0·7 per cent. carbon and 0·6 per cent. manganese, together with a suitable alloy in the head, and not more than 0·2 to 0·3 per cent. carbon (a mild steel) in the foot. In applying the impact bending test, the compound rail was required to deflect at least 100 mm. ($3\frac{15}{16}$ in.) and the other two qualities at least 60 mm. ($2\frac{3}{8}$ in.) under the falling weight without fracture. By 1936 these requirements of the Swiss Federal Railways had been somewhat modified, doubtless in order to reduce the risk of fracture, the Brinell hardness required on the head of rails which had been subjected to the martensitic treatment being from 350 to 400, while compound rails had to show 300 to 350 Brinell hardness on the running surface, and rails that had undergone the sorbitic treatment 280 to 330 Brinell.

Type of Steel Treated

The most extreme of the Continental heat treatments of rails is that which has been developed at the Sulzbach-Rosenberg works in Eastern Bavaria, Germany, of the Eisenwerk-Gesellschaft Maximilianshütte, and on one of the works visits connected with this year's International Rail Congress at Düsseldorf we were able to see this process in operation at Rosenberg. The process by which the rail steel is produced at this works is the Thomas, or basic Bessemer (as is the general practice in Germany and France), and the treatment consists in quenching the entire rail-head, immediately after the rail has left the mill, in order to produce a structure of martensitic quality in the wearing part of the head. Originally the steel used for this purpose was a straight carbon steel with a fairly normal analysis—for the basic Bessemer process—containing about 0·40 per cent. carbon, but latterly a new type of steel has been developed containing only 0·32 to 0·36 per cent. carbon; this is in combination with 0·70 to 0·90 per cent. silicon and 0·70 to 0·90 per cent. manganese; sulphur and phosphorus are normal at about 0·05 per cent. and 0·06 per cent. respectively. The effect of this changed composition is to give greater liberty in the quenching without the risk of producing fissures in the rail-head, and whereas in Great Britain the relatively soft untreated foot of the rail might be expected to give difficulty in severe traffic conditions by excessive chair-galling, or indentation of the rail-foot (equally with the mild steel foot of the compound rail), the considerably greater bearing area of the flange rail on its sole-plate, as compared with the bull-head rail on its chair-seat, is adequate in Continental countries to guard against foot troubles arising out of this chemical composition. Further, in the standard " K " type of track used on the German State Railway, the compressed poplar slip between the foot of the rail and the sole-plate serves to protect the former. When this special low carbon silicon steel is being made it is necessary to treat 100 per cent. of the mill output, as the wearing capacity of untreated steel of this analysis would be inadequate; and for the same reason the maker has not the option of treating only middle and bottom rails from the ingot, should he so desire.

Rolling and Quenching

At the Maximilianshütte works ingots of approximately 3 tons weight were being used, and the rail section in course of rolling and treatment was the 49 kg. per m. (98 lb. per yd.) standard section of the German State Railway. After 20 passes in the blooming mill, and 9 through the roughing and finishing mills, a bloom is produced of sufficient length to cut, after cropping, to one 30 m. (98 ft. 5 in.) and one 15 m. (49 ft. $2\frac{1}{2}$ in.) rail, together with an additional $1\frac{1}{2}$ m. or slightly less on the rail-end to provide for the bending tests. The shorter rail is cut from the top of the ingot, and the longer rail from the bottom; both are subjected to quenching treatment simultaneously. A jet of steam under considerable pressure is directed on the rail at the last two passes through the mill—a common practice in Germany—in order to clean the surface of scale. In the case of the 30 m. rail, after it has been cut to length at the hot-saw, it is inverted, and a frame of relatively light but rigid construction is lowered on to it, from which are suspended eighteen sets of clamps at equidistant spacings. These firmly grip the foot of the rail, which is thus held with the head downward exactly horizontal during the dipping process. The temperature of immersion, which is pyrometrically checked in the case of each rail, is from 880 to 900° C. The 15 m. rail is similarly treated, but requires only nine sets of clamps to hold it.

Dipping takes place in a long and narrow tank of running water, in which the rail head, but no part of the fishing or the web, is immersed for its entire length. The duration of the immersion at the time of our visit was

68-69 sec. per rail; slight variations of the quenching time are made to meet variations in the carbon contents of different casts. The rail is then withdrawn from the tank and lowered on to the mill floor; immediately it is released from the frame, it begins to curve by contraction of the head into a considerable camber. Dogs attached to wire ropes are then attached to the outer ends of the rail, which is drawn by a steady tension round a curved frame into a counter-camber. The total amount of counter-camber which by experience has been found necessary with 30 m. treated rails is 5·40 m. (17 ft. 9 in.). The curved frame round which the rail is drawn is to ensure an even curvature, but a disadvantage of this method, as compared with the cambering machines that are in use in British rail-mills in connection with the sorbitic treatment of rails, is that variations of camber according to rail section make it necessary to provide a different frame for every section treated, whereas the British cambering machines provide for unlimited variation of camber. After cambering, each martensitic rail is left to cool out normally, and while doing so gradually straightens itself, the amount of cold-straightening finally required, in view of the drastic nature of the treatment, being surprisingly small. The final operation, apart from ending to length and drilling, is that of passing the rails through a very fine modern roller straightening machine, with eight heavy rollers, four upper and four lower; the time required for each 30 m. rail is a little under 1½ min., and no further hand-straightening is required, the straightness of the rails being practically perfect.

Falling Weight Tests

The effect of the treatment is to provide the rail-head with a hardened "case" of martensite, extending round the top of the head and down the two sides, so that side-cutting wear on curves is as well provided for as head wear on the straight. The back-flow of heat from the foot and web of the rail to the head, after the quenching, provide for some annealing and for a smooth transition from the martensitic structure of this outer layer through sorbite, troostite, and ferrite to the normal pearlite-ferrite structure of the web and foot, which helps to safeguard the rail section as a whole from tendencies to fracture in shock conditions. The centre of the head, also, is but little harder than the lower part of the rail. On our visit, falling weight tests were applied to rails which had just been treated; in one case test-pieces of rail of the customary length of a little over 1 m. were laid head upwards on supports 1·0 m. (3 ft. 3½ in.) apart, and sustained in succession blows of a metric *tonne* weight, first from 5 m. (16 ft. 5 in.) and then seven times in succession from 3 m. (9 ft. 10 in.) without fracture, at the end of which time it had deflected 16 cm. (6¼ in.). It may be remarked that this test, although sufficient to meet the requirements of the German State Railway, is easier than the B.E.S.A. standard test in Great Britain, which in the case of the 100 lb. flat-bottom B.S. section requires the slightly heavier ton weight (2,240 as compared with 2,204 lb.) to fall from 26 ft. 6 in. (8·1 m.), or in the case of the 95 lb. flat-bottomed section from 25 ft. (7·6 m.) without fracture of the rail; with the 95 lb. and 100 lb. bull-head sections the B.E.S.A. requirement is successive blows from 7 ft. (2·13 m.) and 20 ft. (6·1 m.) without fracture. The supports of the rail in the B.E.S.A. test also are 3 ft. 6 in. instead of 3 ft. 3½ in. apart. No relaxation of this British test is permitted with heat-treated or alloy rails; and in addition the Sandberg regulated sorbitic rails are tested head downwards, with the treated part of the rail in tension instead of compression—an even more severe test. Information is not available as to how a martensitic rail would behave under tests of this severity, but an illustration in a report on these rails prepared in 1936 by Professor M. Ros indicates that a rail of this quality subjected to testing head downwards sustained a relatively small deflection before fracture occurred.

Hardness and Bending Tests

Finally a polished section of one of the treated rails was subjected to the Brinell test, and impressions made 4·5 mm. (a bare 3/16 in.) below the head gave Brinell readings of 426 in the top left-hand corner, 423 in the centre, and 420 in the top right-hand corner. In the centre of the head, however, the reading was no more than 235 Brinell, which is but little above the normal hardness of the steel, about 200 Brinell. In general, the martensitic high silicon rail shows a hardness of between 360 and 440 round the head and to a depth of 3/32 in. below the surface, corresponding to a tensile strength of between 82 and 98 tons per sq. in., while the web and flange give a Brinell reading of 195 to 220, corresponding to a tensile strength of 44 to 49 tons per sq. in. In the static bending test, a length of 49 kg. per m. (98 lb. per sq. in.) flat-bottomed rail, laid on supports 1 m. (3 ft. 3½ in.) apart, is expected to stand the application of a static load of 100 *tonnes*, and to deflect not less than 3·95 in., without failure or the development of cracks. Here again, however, the rail is tested head up, with the hardened head in compression and not in tension. Experiments have been conducted in which the ingots used for the manufacture of the martensitic rails have been cast with a centre of mild steel of about 135 Brinell hardness, and the ingots have been rolled in such a way as to bring this core to the centre of the head, but this method is not in general use for martensitic rails.

Since the martensitic treatment was begun at Rosenberg by the Maximilianshütte Company, the German State Railway has taken about 12,000 *tonnes* of this quality, of which 2,000 *tonnes* have been of the new high-silicon composition. The party that visited the works at Sulzbach-Rosenberg was also taken by special train to a point on the Berlin—Munich main line, a short distance south of Probstzella, Thuringia, where rails of both qualities were seen in the track. The normal carbon rails had been in the road for ten years, but the silicon rails had been laid recently. The section concerned is a long gradient at 1 in 40, over which most ascending trains require banking assistance, and down which the brakes are constantly in use, owing to sharp curvature. These rails are, however, wearing well, and there are no signs of excessive side-cutting, as was previously experienced with untreated rails; they are laid in both the ascending and the descending tracks. Most of the Maximilianshütte martensitic rails, however, have been laid in electrified suburban lines in the vicinity of Berlin.

Wear Experiments in Switzerland

Extensive wear experiments have also been conducted in the Gotthard main line of the Swiss Federal Railways, both between Amsteg and Gurtnellen, and between Lavorgo and Giornico, where the grade is 1 in 38½ continuously, and the curves vary from 280 to 300 m. (14 to 15 ch.) in radius. Whereas ordinary rails laid in this location in 1927, with a tensile strength of 41 to 44 tons per sq. in., lost 4·57 sq. cm. of their cross section by side-cutting after carrying 17,400,000 *tonnes* of traffic, between Amsteg and Gurtnellen, and 5·00 sq. cm. between Lavorgo and Giornico, after carrying 23,700,000 *tonnes*, the corresponding losses of Maximilianshütte martensitic rails, with a tensile strength of 76 tons per sq. in. in the hardened zone of the head, laid in 1928, were 1·99 sq. cm. per 25,800,000 *tonnes*, and 2·27 sq. cm. per 33,000,000 *tonnes* respectively; averaged out, the loss

was 1 sq. cm. per 4,270,000 *tonnes* in the case of the martensitic rails, as compared with 1 sq. cm. per 1,375,000 *tonnes* in the case of the ordinary rails—an advantage of over 3 to 1 in favour of the former. In comparison with British practice, even in 1928, however, the tensile strength of the ordinary rails in this test was extremely low. The treated rails were of the original straight carbon quality of steel; results are not sufficiently advanced to enable a similar comparison to be made with the high silicon quality, which is of more recent introduction.

Rails of the latter quality since laid in by the Swiss Federal Railways have given test results indicated on the annexed diagram; the hardened zone of the head has shown a yield point of 100 kg. per sq. cm. (63½ tons per sq. in.), and a breaking strength of 144·6 kg. per sq. cm. (91·8 tons per sq. in.) in conjunction with an elongation of 3·7 per cent. and a reduction of area of 10 per cent; the untreated steel had a yield point of 39·5 kg. per sq. cm. (25·1 tons per sq. in.), and broke at 72·4 kg. per sq. cm. (46·0 tons per sq. in.), with an elongation of 15·9 per cent., and a reduction of area of 49 per cent. Here again the tensile strength of the untreated steel would be, to British standards, on the low side, as breaking strengths in excess of 50 tons per sq. in., with higher average elongations exceeding 17 per cent., are now customary here, and for reasons of chair indentation referred to earlier, this quality of steel might not commend itself to British engineers, though evidently giving no trouble with flat-bottom rails. Details of these Swiss tests are taken from the report previously referred to, by Professor E. M. Ros, Principal of the Materials Testing Laboratory attached to the Swiss Federal Technical College at Zurich, in which a detailed analysis of the physical properties and wear characteristics of these rails was made, and a favourable conclusion was reached as to their wearing capacity and reliability in service. As yet the Sulzbach-Rosenberg works of the Maximilianshütte company is the only works in Europe at which rails of this particular type are produced.

RAIL EXPANSION JOINTS IN INDIA

IN view of the modern practice of welding rails in the track and of securely fixing them to steel sleepers on bridges, the Central Standards Office for Railways, India, has designed special rail expansion joints. Figs. 1 and 2 below illustrate joints for welded lengths up to 100 ft. and 350 ft. respectively. The features of the

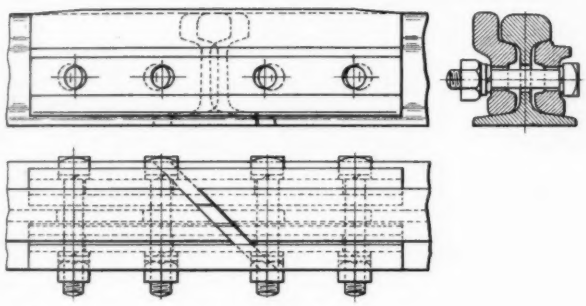


Fig. 1

design are that the maximum gap in the rail table is limited to half its width, and also that a portion of the load is taken by the special outside fishplate which is raised to carry the tyre of the wheel. For 100 ft. lengths it is considered necessary merely to mitre the ends of the rails whereas for greater lengths a halved or scarfed end has been adopted.

This type of expansion joint is very much cheaper than the older and commoner slip or tongue rail type, and is based on the B.B. & C.I. Railways design used on the Silver Jubilee bridge over the Nerbudda River, illustrated

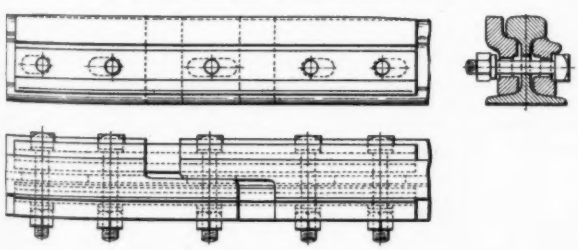


Fig. 2

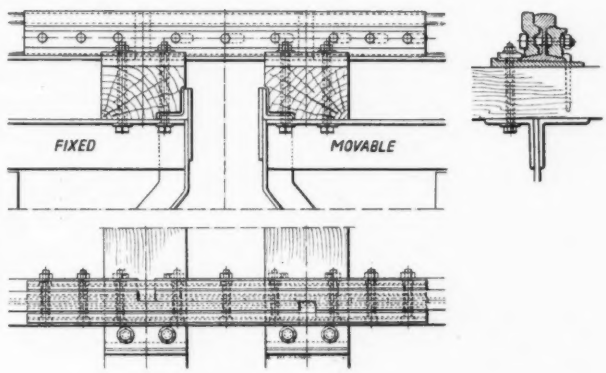
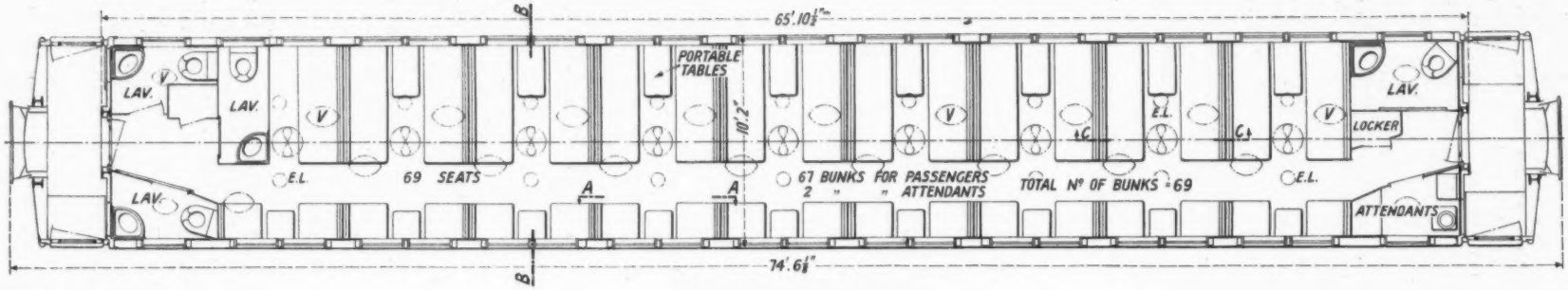


Fig. 3

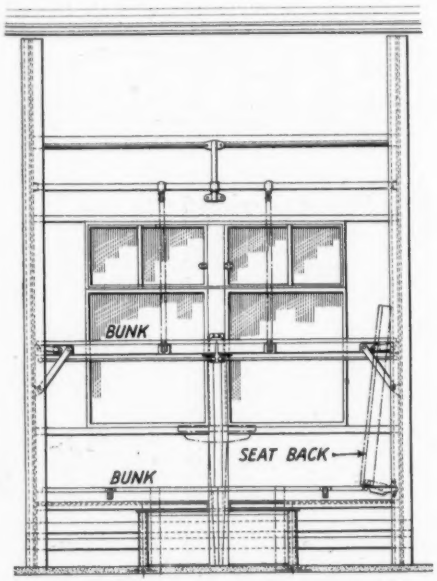
in Fig. 3, which was installed in 1935 and is functioning very satisfactorily.

It will be noticed that in Fig. 2 one bolt is shown through the halved end of the rails whereas in Fig. 3, three bolts have been shown. It has not yet been decided whether one, two, or three bolts will be used. This will depend on the behaviour of the joints at present under trial. The nature of the sleeper support adopted depends on conditions. Experiments are being undertaken with various sleeper spacings at joints to secure the best supporting arrangement.

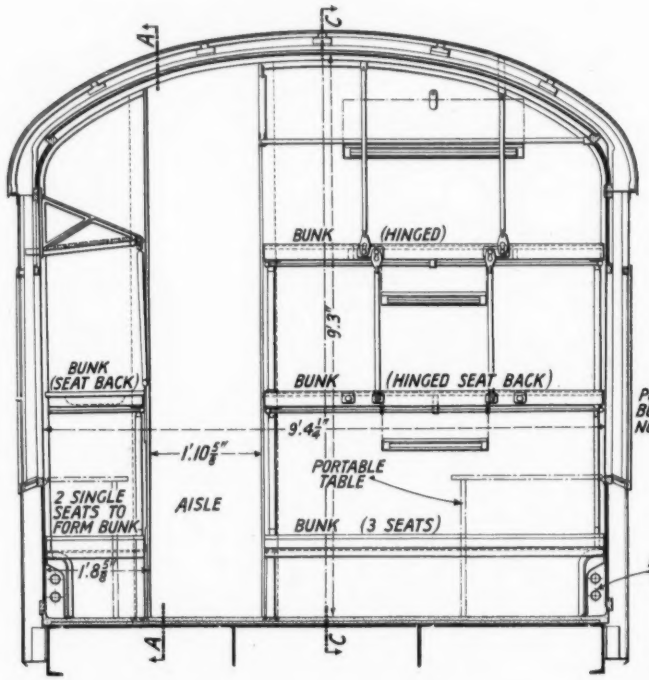
MECHANISATION IN COUNTY DURHAM.—There were touching scenes in Darlington on November 7 when the L.N.E.R. rolley drivers, many of them veteran horsemen, were required to say farewell to the heavy carthorses. The cartage there was then mechanised, and for this purpose the Darlington fleet of mechanical horses was increased during that week-end from 5 to 17; of these 16 are of the 3-ton class and one is a 6-tonner. With the displacement of horses at Bishop Auckland at the beginning of September, Darlington remained the only horse town in the area, and since the changeover there all the cartage horses in the area covered by the Middlesbrough district of the L.N.E.R. have gone.



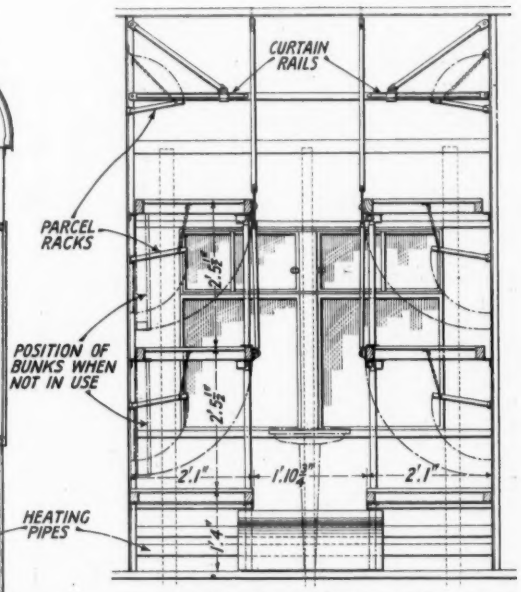
General arrangement plan



LONGITUDINAL SECTION THRO' A A



CROSS SECTION THRO' B B



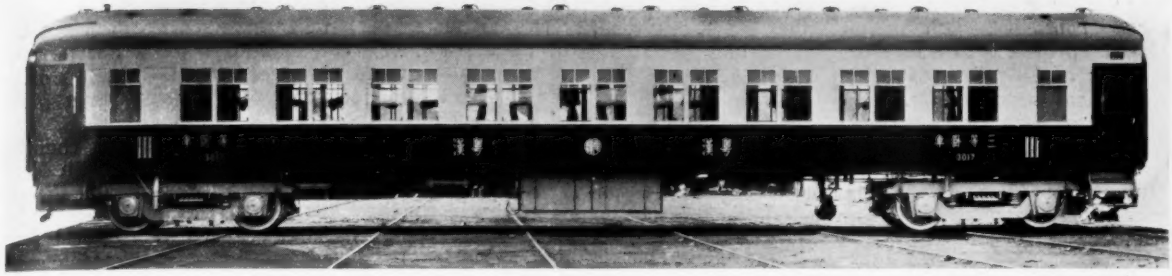
LONGITUDINAL SECTION THRO' C C

Typical cross-section

NEW THIRD CLASS SLEEPING CARS, CHINESE NATIONAL RAILWAYS

REMARKABLE THIRD CLASS SLEEPING CARS

These cars, built in England for the standard-gauge Chinese National Railways, each provide beds for 69 persons



Exterior view of one of the new Chinese third class sleeping cars

THE remarkable third class sleeping cars briefly described in THE RAILWAY GAZETTE of June 17 (p. 1161) have attracted so much interest that we are now publishing some further details with additional drawings and photographs. Together with a number of other cars of different types described in the former article, they were built by the Birmingham Railway Carriage and Wagon Co. Ltd. to the requirements of the Chinese Ministry of Railways and the inspection of Messrs. Sandberg, for service on the Canton—Hankow section of the Chinese National Railways. A brief recapitulation of the general dimensions and features of these cars is as follows:—

Width:	over body sides	10 ft. 2 in.
	between inside finishing sheets	9 ft. 4¼ in.
Height:	rail to centre of coupler	3 ft. 6⅛ in.
	rail to floor	4 ft. 8 in.
	rail to top of roof	14 ft. 9 in.
	floor to ceiling	9 ft. 3 in.
Length:	between gangway face-plates	74 ft. 6⅛ in.
	over body	72 ft. 6 in.
	between bogie centres	51 ft. 10 in.
	inside main saloon	52 ft. 1 in.
	between partitions	6 ft. 0¾ in.
Wheel diameter on tread		3 ft. 3⅜ in.
Journal size		10 in. × 5½ in.

The cars being all-steel in construction, with wood inner finish, have their bodies and frames integral in box-girder form, thus eliminating trussing and increasing strength, while the use of four 6-in. I-section posts at each end makes them proof against telescoping and all ordinary impacts. Ministry of Railways standard bogies are fitted, having four wheels, equalising beams with triple helical beam springs, and swinging bolsters with quintuple full-elliptic bolster springs. Isothermos axleboxes are fitted, and the cars are equipped with Pitt-type pivotted-head M.C.B. couplers, Bradford rocker-type draught gear with Farlow two-key attachment, Stone's lighting, Vapor heating, Beclawatt windows in Alpax frames, and Airvac roof ventilators. In one order of cars the glasses and louvres drop to open, as in the picture opposite, while in a second order they rise to open, as in the drawings on the opposite page. This variation has been made for experimental purposes.

Each car has sitting and sleeping accommodation for 69 persons including two car attendants, and the following description, supplemented by an examination of the accompanying drawings and photographs, will demonstrate how so many are accommodated.

An aisle traverses the nine semi-compartments into which the car interior is divided. On one side of this aisle the seats are arranged three abreast, while on the other side single seats only are placed. For night use the triple seats become the lowest transverse bunk of each tier, the middle bunk being formed by the seat back, while the topmost bunk is hinged up from its daytime position flat against the partition. The single seats, which in daytime face one another across a detachable table, are slid out for night use until their outer edges touch, filling pieces dropping into position at the inner edges of the seats to form a continuous bunk. The seat backs swing outwards and upwards until their tips align, thereby forming the

View of a section of Chinese third class sleeping car showing, on right, the day time seating arrangement, and, on left, the bunks ready for night use

upper longitudinal bunk. The bunks, when swung into position for sleeping, are fixed by brackets, supports and/or chains to avoid any possibility of accident to passengers. The personal luggage, always a considerable item in China, is, in daytime, accommodated on racks above the top transverse bunk, below the seats, and on a longitudinal rack above the windows on the aisle side of the cars.

Though no bedding is provided, it would be impracticable to run these cars without car attendants to raise and lower the bunks and supervise passengers. In China, however, in contradistinction to some other Asian countries, it has been the custom for some years to allot car attendants for all long-distance main-line cars, so the present arrangement is no novelty.

It will be seen that even when the generous loading-gauge of the Chinese National Railways is fully utilised, the space per passenger is by no means excessive, not only in the standing room, but also in the bunks. Nevertheless each passenger has his own bed, limited though its width and length may be. It will also be seen that some very clever designing was necessary to obtain sufficient length to the transverse bunks without unduly cramping either the aisle or the longitudinal bunks. The height of the average Chinese is not, however, as great as that of a European, and the bunks in the triple tiers, 5 ft. 9 in. in length, are adequate for all ordinary passengers, while the twin-tier bunks, 6 ft. in length, are available for taller persons.

The history of the adoption of this type of sleeping car is of interest. The type was evolved a number of years ago on the Trans-Siberian railway, and is used on the ordinary trains for third class passengers and also for train staff, &c. The Japanese-run South Manchuria Railway copied the system but as the width of its coaching stock was considerably less than that of the Russian 5-ft. gauge, the transverse bunks had to be shortened considerably. Mr. Kenneth Cantlie, Adviser to the Ministry of Railways, on a visit to Siberia, noted the Russian cars, measured them, and later the Ministry evolved its own variation of the design in which the main drawback of the Japanese cars has been overcome by reduction of thickness of the car side and careful experiment in the minimum widths of aisle and seating possible.

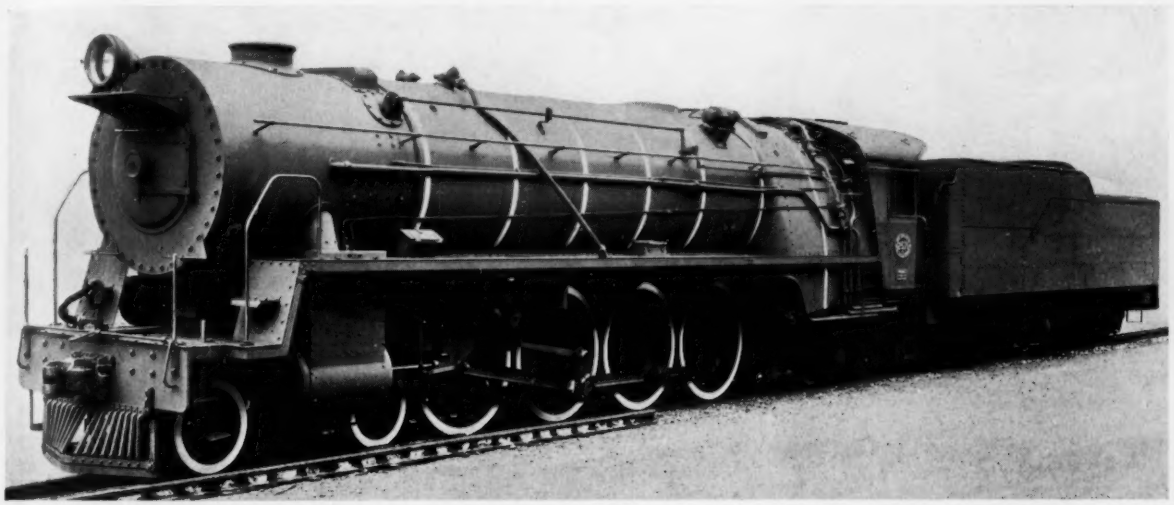
The possibility of using the design in other countries of course is dependant on the loading gauge. In North and South America and Australia, in the main, there is little difficulty on the lines of standard gauge or larger, while the broad gauge lines in India also present small difficulty provided that the new enlarged loading gauge is used. On European and other standard-gauge lines, as well as on narrow-gauge railways, however, the design is impossible without modification; but, provided that adequate height is obtainable, omission of the single seats, and the placing of the aisle at the side of the car, would render the principle of the scheme widely applicable.

Display of banners and posters at Waterloo in connection with the railways' "square deal" campaign. Similar notices are being exhibited at stations throughout the country

NEW 4-8-2 TYPE LOCOMOTIVES FOR SOUTH AFRICA

Of three classes, "15E," "15F," and "23," these are among the most powerful non-articulated locomotives so far built for the 3-ft. 6-in. gauge

THE accompanying illustrations show three different classes of powerful 4-8-2 locomotives recently built for the railways of the Union of South Africa and known as Classes "15E," "15F," and "23" respectively. The engines of Class "15E" have been built by Robert Stephenson and Hawthorns Limited, Darlington, also by Henschel & Sohn, of Kassel, and the Berliner Maschinenbau A.G., of Berlin. These locomotives were constructed to the requirements of Mr. A. G. Watson, late Chief Mechanical Engineer, for working both passenger and freight trains over the main lines of the system. The Class "15E" locomotives built at Darlington were illustrated and described in THE RAILWAY GAZETTE of January 10, 1936 (page 64). The Class "15F" engines are in all main dimensions identical with "15E" series, but are fitted with piston valves and Walschaerts motion in place of the R.C. poppet valve gear applied to earlier engines, and differ also in the arrangement of the flexible stays for the fireboxes.



Class "23" locomotive with 5-ft 3-in. driving wheels, piston valves and 12-wheeled tender. These engines have mechanical stokers

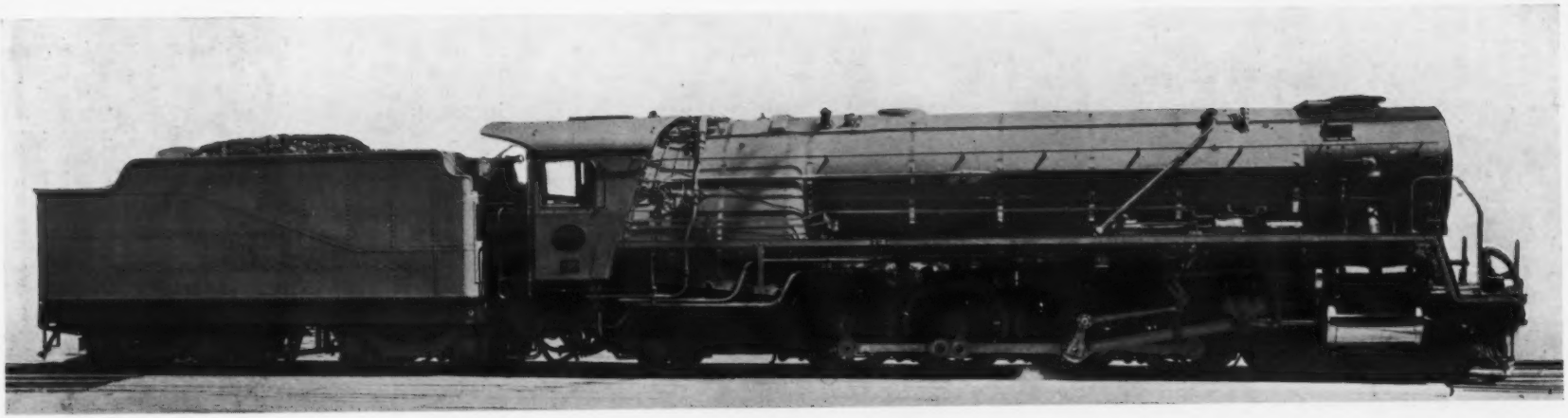
To meet the demands for a more powerful locomotive to handle the important passenger traffic over the main line between Cape Town and Johannesburg, the present Chief Mechanical Engineer, Mr. W. A. J. Day, designed the type of engine designated Class "23" in 1936, and contracts for 20 locomotives were placed with Henschel & Sohn and the Berliner Maschinenbau A.G., 13 with the former and 7 with the latter. At the present time a total of 116 further engines is on order, 85 from Henschel & Sohn and 31 from the Berliner Maschinenbau A.G. In addition a further lot of 44 Class "15F" locomotives is under construction at the works of the North British Locomotive Co. Ltd., Glasgow.

In working out the designs for the "15F" and "23" class engines, the question of the standardisation of as many details as possible has been kept in view. As a result the boilers of the "15E," "15F," and "23" classes are identical and the "15E" and "15F" are further, as already mentioned, practically identical in all principal dimensions, both engines being built on the same centres. The boilers common to these three classes are of large proportions, having a total evaporative heating surface of 3,414·5 sq. ft. made up as shown in the table overleaf. The superheater of 34 elements, 1½ in. outside diameter is of the short loop type and has a heating surface of 661 sq. ft., the flue tubes are 5½ in. and the tubes 2½ in. diameter. The length between the tube plates is 22 ft. 6 in. The inside firebox is of steel radially stayed, and two rows of flexible stays are fitted in the crown sheet at the front near the tube plate; flexible stays are also applied at the sides and in the back plate, in the so-called breaking zones.

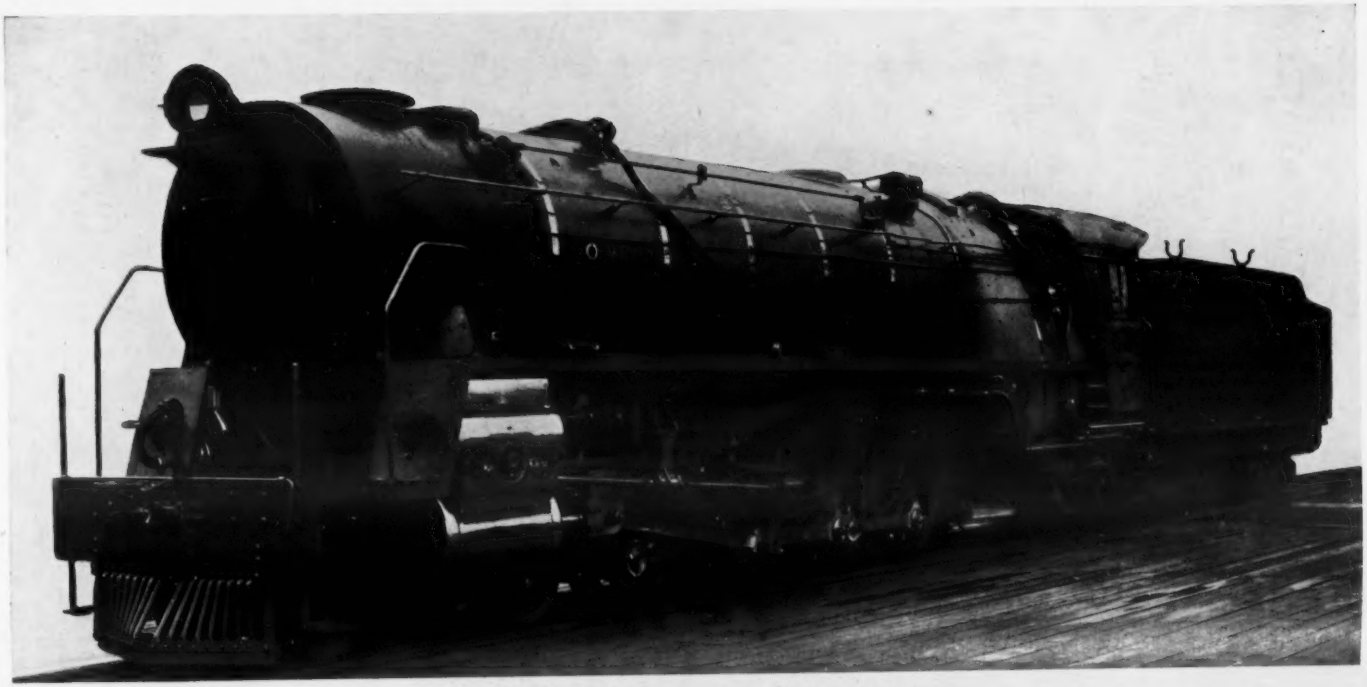
The main steam supply to the cylinders is taken through internal collecting piping to the superheater header, which incorporates a multiple valve throttle arranged on the saturated steam side in accordance with the South African Railways practice. The grate area is 62·5 sq. ft. and shaking grates are provided, as is also a hopper type ashpan with drenching piping supplied with water by the boiler feed injectors.

For the Classes "15E" and "15F" engines, the working steam pressure is 210 lb. per sq. in. and for the Class "23" engine the pressure is 225 lb. per sq. in. Bar framing, machined from rolled steel slabs, is used for all the engines, each side being in one piece extending from the front bumper to the rear under the cab.

The boiler is carried at the back end by a vertical diaphragm plate and at the two front corners by sliding pieces resting on brackets fixed to the frames. The barrel



Above : Class "15F" locomotive with 5-ft. coupled wheels, piston valves and 8-wheeled tender



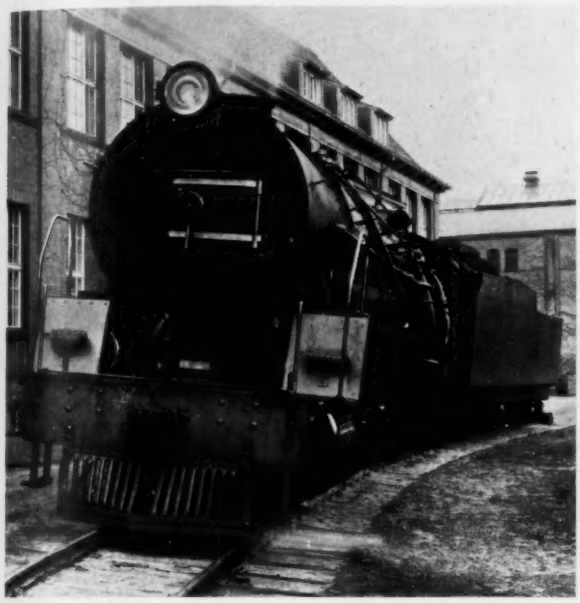
Right : Class "15E" locomotive with 5-ft. coupled wheels, R.C. poppet valves and 8-wheeled tender

NEW 4-8-2 LOCOMOTIVES, SOUTH AFRICAN RAILWAYS

section is further supported by flexible diaphragms at four points in its length, and the smokebox is bolted to the half saddles formed integrally with the two cylinder castings.

The cylinders and details are interchangeable for "15F" and "23" class engines. They are of cast iron and have liners; 12-in. dia., long-travel piston valves are used, operated by Walschaerts motion controlled by a steam reversing gear. Automatic air valves and Hendrie bye-pass valves are fitted, and a Sellar's drifting valve is used to supply steam to the valve chests when running with the main regulator closed.

The axleboxes for the coupled wheels are of bronze with Ajax grease collars. Ajax grease fittings are also supplied to the rods and motion, as well as to the brake



Front view of Class "23" locomotive

gear and spring equalising gear. The return cranks have roller bearings, and the connecting rods and coupling rods have floating bushes. The crossheads, of steel castings, are of the underhung or Laird type, and the connecting rods are of heat-treated steel. The whole of the revolving weights are balanced and as large a percentage of the reciprocating parts as possible for the hammer blow at 55 miles per hour to be limited to 1·6 tons on any one wheel. The leading trailing and tender trucks have roller bearings, and both Timken and SKF types are being used. A steam brake operated by two steam cylinders acts on the brake blocks on each of the coupled wheels through the medium of compensated brake rigging. The axle loads are carried by overhung springs with compensating levers.

The leading truck is of a standard design, having swing links controlled by two horizontally placed laminated springs, and the weight is taken by the usual arrangement of laminated springs and compensating beams. The rear truck is of the Cole pattern with coil spring side-movement control gear.

The Class "23" locomotives differ principally from the others in having larger driving wheels, 5 ft. 3 in. as against 5 ft. Their use has necessarily increased the coupled wheelbase, and in order that these engines may negotiate the same curves as the other classes, the leading coupled axleboxes are allowed transverse movement, controlled by the Alco centring device, and the leading coupling rods have special bearings for the crank and knuckle pins to allow them to turn in their bearings.

The increased steam pressure of 225 lb. per sq. in. in the Class "23" engines produces the same tractive effort as for the engines of Classes "15E" and "15F," although the wheels are 3 in. greater in diameter. To enable these large locomotives to develop a high proportion of their potential power at running speeds, a mechanical stoker, of the H.T. type made by the Standard Stoker Company, is provided, thus permitting a larger amount of coal to be fired, and in that manner increasing the boiler output. The higher rate of evaporation has necessitated the provision of very large tenders, carried on 12 wheels, with a capacity of 18 tons of coal and 9,500 gallons of water. The engine of the mechanical stoker is also mounted on the tender. Four vacuum brake cylinders operate clasp brakes on each wheel, and in addition the usual hand brake is provided.

Principal dimensions

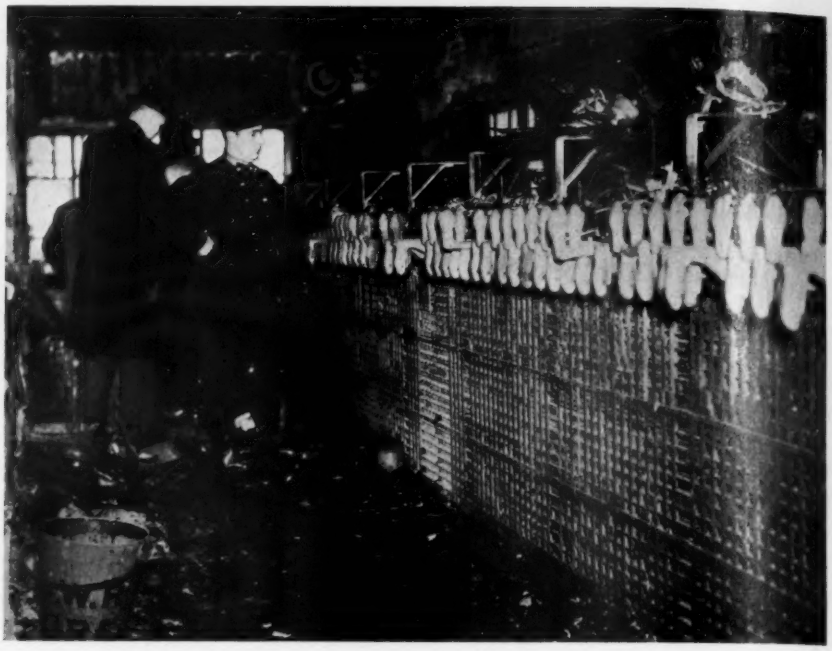
The principal dimensions of the locomotives are as follow:—

Type	4-8-2	4-8-2
Class	"15E" and "15F"	"23"
Cylinders, diameter and stroke	24 in. × 28 in.	24 in. × 28 in.
Wheels :		
Coupled	5 ft. 0 in.	5 ft. 3 in.
Front truck	2 ft. 6 in.	2 ft. 10 in.
Rear truck	2 ft. 10 in.	2 ft. 10 in.
Wheelbase :		
Coupled	15 ft. 9 in.	15 ft. 9 in.
Total engine	35 ft. 8 in.	36 ft. 0½ in.
Evaporative heating surfaces :		
Tubes (136 × 2½ O.D. × 11 S.W.G.)	2,014 sq. ft.	2,014 sq. ft.
Flues (36 × 5½ O.D. × ¾ in.)	1,165 sq. ft.	1,165 sq. ft.
Firebox (including arch tubes)	236 sq. ft.	236 sq. ft.
Total	3,415 sq. ft.	3,415 sq. ft.
Superheating surface	661 sq. ft.	661 sq. ft.
Combined heating surface	4,076 sq. ft.	4,076 sq. ft.
Firegrate area	62·5 sq. ft.	62·5 sq. ft.
Working pressure, lb. per sq. in.	210 lb.	225 lb.
Tractive effort at 75 per cent. working pressure	42,335 lb.	43,200 lb.
Adhesion weight	71¾ tons	73¾ tons
Weight of engine in working order	107¼ tons	111¼ tons
Water capacity of tenders	5,940 gal.	9,500 gal.
Coal capacity of tenders	12 tons	18 tons
Weight of tender, full	69¾ tons	105 tons
Total weight of engine and tender	177 tons	216¼ tons

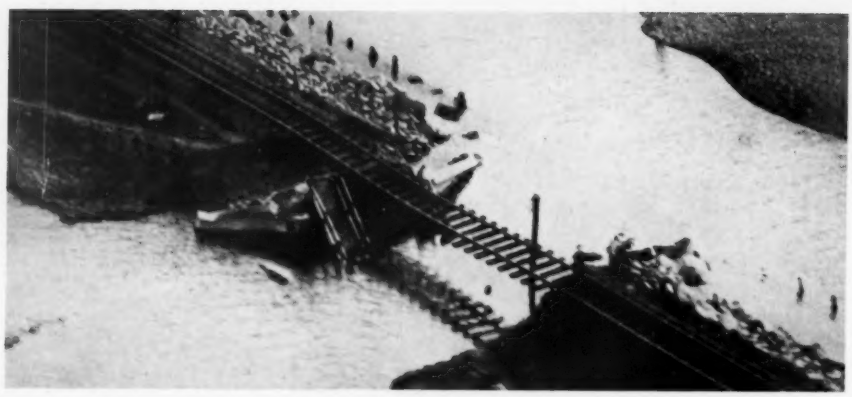
Included in the fittings applied to these remarkable locomotives are headlight equipment by J. Stone & Co. Ltd., including cab lights and tender rearlight; a Stone-Deuta non-recording speed indicator; Detroit or Eureka sight feed lubricators for the valves and pistons and also for the stoker engine; two Ross pop safety valves; Dewrance water gauges; Diamond tube cleaners; Davies & Metcalfe ejectors and steam brake valves; Gresham & Craven non-lifting injectors; the Vapour Car Heating Company's equipment for steam heating the trains; automatic couplers; and Spencer Moulton draft gear. Steamchest pressure gauges are also fitted, and engines without mechanical stokers have Ajax firedoors.

These locomotives have been built under the supervision of the Advisory Engineer to the High Commissioner for the Union of South Africa, Mr. C. T. Swallow, and the Inspecting Engineers in Germany are Messrs Everett & Harle, of Cardiff and Essen.

XUM



Interior of the burnt out Paddington arrival signal box
(*see pages* 944 *and* 974)



The bridge at Black Rock halt, between Criccieth and Portmadoc, G.W.R., destroyed by the 100-*m.p.h. gale which swept North Wales on November* 23

The rear vehicles of an Italian State Railways train which fell into the River Torre when a bridge collapsed near San Gottardo, on the Cividale—Udine line, on November 22. *The collapse was caused by a flood, and to make rescue work possible the stream at this point was diverted by a dam*
(*see page* 977)

RAILWAY NEWS SECTION

PERSONAL

Lord Stamp, Chairman and President of the L.M.S.R., was on November 26 made an Honorary Associate of the College of Technology, Manchester University.

Mr. W. J. Dalby has been appointed District Traffic Agent at Vancouver of Trans-Canada Air Lines, the transcontinental air transport system associated with the Canadian National Railways.

INSTITUTION OF LOCOMOTIVE ENGINEERS

The following elections of members and associate members are announced by the institution:—

Members

Mr. G. Hodge, Assistant Mechanical Officer, Nigerian Railway.

M. R. Liechty, Chief Engineer, V.R.L. Company, Neuchatel, Switzerland.

Associate Member Transferred to Member

Mr. F. H. Petty, Assistant to Locomotive Running Superintendent (Technical), N.E. Area, L.N.E.R.

Associate Members

Mr. J. A. Bainbridge, Locomotive Shed Foreman, Sierra Leone Government Railways.

Mr. E. H. Spendlove, Draughtsman, Locomotive Drawing Office, Derby, L.M.S.R.

Mr. Joseph Farndale, Chairman of the Traffic Commissioners for the Yorkshire area, will vacate that office on December 31. He was one of the original chairmen appointed under the Road Traffic Act, 1930.

INSTITUTE OF TRANSPORT

The following are among the elections of members and associate members made by the institute during the summer and autumn:—

Members

Mr. W. J. England, Assistant Superintendent of Operation, Southern Railway.

Mr. R. N. Nicolls, General Manager, Darjeeling Himalayan Railway.

Mr. E. A. Richards, Indoor Assistant to Chief of Operation, Buenos Ayres Great Southern and Western Railways.

Associate Members

Mr. J. R. Pike (L.M.S.R.); Messrs. C. S. McLeod, H. W. Warwicker (L.N.E.R.); Messrs. G. Dean, R. D. H. Jones (G.W.R.); Messrs. A. A. Armstrong, H. E. Cockram, V. C. Dalziel, A. S. Lloyd, W. L. Robinson (N.S.W. Government Railways); Messrs. G. R. G. Clarke (B.A.G.S.R.); P. D. Coetzee (South African Railways and Harbours); N. A. F. Harvey (Central Uruguay Railway).

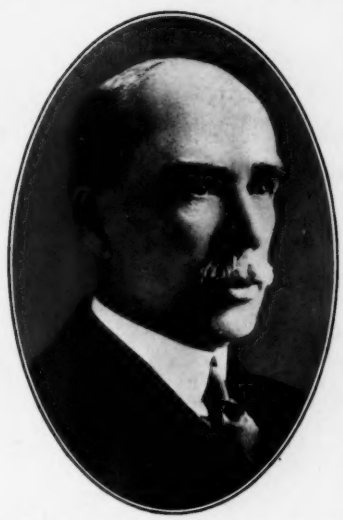
Mr. Frederick Mills, Chief Draughtsman, Mechanical Branch, Western Australian Government Railways, has been awarded first prize in the "Railroad Locomotives" section of the James F. Lincoln Arc Welding Foundation, for his paper on the design of a completely welded plate frame for a steam locomotive. This year the foundation has distributed 382 awards to authors of papers on welding, as summarised in our issue of October 7. Mr. Mills served an apprenticeship with

Mr. Frederick Mills

Winner of 1st prize, "Railroad Locomotives" section, Lincoln Arc Welding Foundation

R. & W. Hawthorn, Leslie & Co. Ltd. at Forth Banks Works, Newcastle-on-Tyne, and was selected for two years' training in the drawing office. He received his technical education at Elswick Institute and the Rutherford Technical College, Newcastle-on-Tyne. During the war he joined the R.A.F., serving as an engine instructor for two years. On discharge Mr. Mills joined the staff of Sir W. G. Armstrong Whitworth & Co. Ltd., where he was employed as Leading Draughtsman for six years. In 1926 he was appointed Locomotive Designing Draughtsman of the Western Australian Government Railways, and promoted Chief Draughtsman in November, 1931. Mr. Mills is a Member of the North East Coast Institution of Engineers & Shipbuilders; the Institution of Locomotive Engineers; and the American Society of Mechanical Engineers; and an Associate Member of the Institution of Engineers, Australia. Mr. Mills has been largely responsible for the progress and development of the Institution of Locomotive Engineers in Australia. He is Secretary of a branch of the institution in Western Australia that has now been active for several years, and has read a number of papers to the institution in England and in Australia.

We regret to record the recent death at Victoria, British Columbia, at the age of 82, of Colonel John Stoughton Dennis, C.M.G., who was for many years Chief Commissioner of the Canadian Pacific Railway Colonisation and Development Department. Colonel Dennis had been identified with the development of Western Canada since



The late Colonel J. S. Dennis, C.M.G.

Chief Commissioner, Colonisation and Development, Canadian Pacific Railway

1872—first with the Hudson's Bay Company, then as Inspector of Surveys for the Canadian Government, as Deputy Minister of Public Works in the old North-West Territorial Government, and later as Assistant to the President of the Canadian Pacific Railway. During his service with the Canadian Pacific, which dated from 1902, his first duties lay in British Columbia where he acted as Superintendent of Irrigation and Chief Land Commissioner. Later he was put in charge of the Natural Resources Department at Calgary, and for many years he was chief of the immigration and land-settlement policy of the Canadian Pacific, which has been the means of settling hundreds of thousands of British, American, and Canadian farmers upon the Western Provinces. During the war Colonel Dennis was Second-in-Command of the British-Canadian Recruiting Mission in the United States, which was instrumental in recruiting over 30,000 British citizens resident in the United States for the British and Canadian forces. In 1918 he went to Siberia with the Canadian Expeditionary Force, in charge of lines of communication, transportation,

Artist's impression of the new Uxbridge station, London Transport, as it will appear on completion; and (on left) the platforms, already opened to traffic, covered by a reinforced-concrete roof

(*See article opposite*)

The R.O.D. annual dinner, held at the Trocadero on November 25

(*See report on page 972*)

accommodation, and general information. He commanded in addition the Red Cross Expedition to Siberia, as Commissioner, and was Chairman of the Canadian Trade Commission at Vladivostock. Colonel Dennis was made a C.M.G. in 1918.

G.W.R. Appointments

The following appointments are announced by the Great Western Railway:—

Mr. H. J. Peacock, Operating Assistant to Superintendent of the Line, Paddington, to be Divisional Superintendent, Cardiff (upon the retirement of Mr. F. G. Wainwright at the end of this year).

Mr. R. P. Davis, Outdoor Representative, Chief Goods Manager's Office, Paddington, to be Assistant District Goods Manager, Swansea (as from January 2, 1939).

Mr. E. A. West, Clerk, Bristol Temple Meads, to be Passenger Agent, Bristol Temple Meads (as from November 1).

Mr. W. M. Bryant, Goods Agent, Shrewsbury, to be Assistant District Goods Manager and Chief Clerk, Newport (as from January 2, 1939).

Mr. G. H. Davis, Clerk, Chief Goods Manager's Office, Paddington, to be Goods Agent, Shrewsbury (as from January 2, 1939).

The directors of Imperial Airways Limited, and of British Airways Limited announce that in view of the air transport developments made known in the House of Commons on November 11 they have invited Mr. W. L. Runciman, son of Lord Runciman to associate himself with their work, and that Mr. Runciman has agreed to do so from December 1.

We regret to learn of the sudden death of Lieutenant-Colonel S. A. Wilkinson, M.R.C.S. (Eng.), L.R.C.P. (London), D.T.H., D.T.M. (Liverpool), Chief Medical Officer, Bombay, Baroda & Central India Railway, which took place after the derailment of the Frontier Mail train, on the night of November 25. The mail was derailed while travelling slowly through Morwani station about 400 miles from Bombay, for which it was bound, but Colonel Wilkinson's saloon, which was next the tender, is reported to have capsized; he is said to have got out from it and to have been walking on the line when he collapsed and died.

Mr. T. Tandy, who, as recorded in our issue of November 11, has been appointed Assistant to the Superintendent of Motive Power, Euston, L.M.S.R., entered the Crewe locomotive works of the former London & North Western Railway in 1908, as an apprentice and pupil of the late Mr. C. J. Bowen Cooke. In 1912 he was transferred to the Running Department, serving at the Longsight, Bangor, and Preston running sheds, but returned to Crewe in 1916 as Assistant to the Running Superintendent (the late Mr. W. H. B. Jones). Mr. Tandy was appointed District Locomotive Superintendent at Willesden, L.M.S.R., in 1926, and in 1931 went to Saltley (Birmingham) in 1931, whence he has now come to Euston.

We regret to record the death at Exmouth on November 6 of Mr. A. W. Denniss, a former Running Superintendent of the Great Northern Railway (Ireland). Mr. Denniss was trained as an engineer on the former North Eastern Railway, and subsequently joined the Ceylon Government Railway as a District Locomotive Superintendent. On his return from Ceylon he was appointed Running Superintendent of the Great Northern Railway (Ireland), which position he held for 16 years, until his retirement owing to ill-health in 1925.

M. Henry Gréard, honorary General Manager of the Paris—Orleans—Midi Railways, who retired from the general managership at the end of 1937, has been appointed by Decree published in the *Journal Officiel* of November 20, President of the Administrative Council of the Comité des Transports Parisiens (Paris Transport Board).

Mr. Ashton Davies, Vice-President, L.M.S.R., who is suffering from typhoid fever, is now reported to be progressing favourably, and no bulletin has been issued since the one we recorded last week.

From *The London Gazette* of November 25: Regular Army, Commands and Staff: Major C. A. Langley, M.C., R.E., relinquishes the appointment of Instructor, Railway Training Centre, R.E.

Major J. C. B. Wakeford, R.E., to be Instructor, Railway Training Centre, R.E.

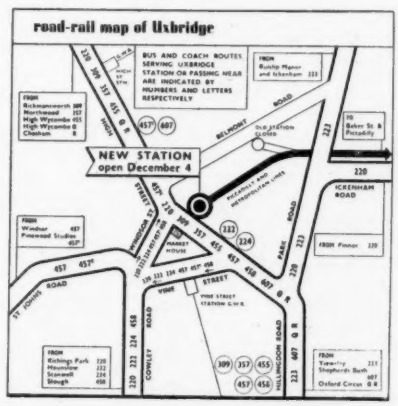
We regret to record the death on November 9, at the age of 88, of Mr. William Finchett, who retired in 1922 from the position of Goods Manager of the Cambrian Railways. Mr. Finchett joined the Cambrian Railways as a junior in the parcels office at Oswestry, and in the course of an active life with the company occupied a number of responsible positions, including that of Accountant.

New Uxbridge Station and Improved Train Service, London Transport

(See illustrations opposite)

Uxbridge station was opened with the 6¾-mile branch line of the Metropolitan Railway from Harrow-on-the-Hill on July 4, 1904. The District Railway extended its then new Ealing—South Harrow line to a junction with the new Metropolitan branch at Rayners Lane in March, 1910, at a time when all these places were well out in the country, separated from London by miles of fields. Uxbridge was 16¼ miles from Baker Street and, by the District Railway, 20½ miles from Charing Cross.

With the westward extension of the Piccadilly tube to join the surface line of the old District Railway at Hammersmith, Piccadilly trains were projected through to Uxbridge in October, 1933. Gradually, as London spread outwards covering the green fields, traffic increased until it became necessary to enlarge and modernise the traffic accommodation. One after another the old stations have been rebuilt and up-to-date signalling installed. Now a new terminus is to be opened at Uxbridge next Sunday, when the old one will be closed. As the latter is inconveniently situated, a new position in the High Street was chosen for the new station which is yet completed only in so far as enables it to deal with the trains. The building which will house an arcade approach to the main booking hall and provide accommodation for the shops and business premises it is necessary to demolish, is not yet finished. But when the whole is completed the new station will be one of the finest on the London Passenger Transport Board's system.


road-rail map of Uxbridge
BUS AND COACH ROUTES SERVING UXBRIDGE STATION OR PASSING NEAR ARE INDICATED BY NUMBERS AND LETTERS RESPECTIVELY
NEW STATION open December 4
OLD STATION CLOSED
BELMONT ROAD
ICKENHAM ROAD
PARK ROAD
HIGH STREET
WINDSOR ST
HILLINGDON ROAD
COWLEY ROAD
ST. JOHN'S ROAD
MARKET HOUSE
FROM Ruislip Manor and Ickenham
FROM Richings Park Iver Heath Stanwell Slough
FROM Yiewsley Shepherds Bush Oxford Circus

Diagrammatic map issued by London Transport to show the new facilities at Uxbridge

Bus services will be re-routed to come right into the station premises and give easy exchange between bus and platforms. In addition, a car park will be provided alongside the station, which will also be convenient for persons wishing to transfer to and from the railway. An approach road is being constructed to the front of the station from the High Street,

which will avoid traffic congestion there. In addition to the other facilities, the station will offer a convenient exchange with trolleybuses and Green Line coaches, which do not serve the existing station.

An increased Uxbridge—Piccadilly through train service, from 4 to 8 trains per rush hour, was brought into operation last Monday. This has necessitated the building of a new power substation at Uxbridge, and another at Rayners Lane. With the through Piccadilly trains to the West End, and in conjunction with improvements to the Metropolitan line whereby passengers from Uxbridge will be able to get to Oxford Circus with only a platform exchange at Finchley Road, Uxbridge will become the best served with transport facilities of any town the same distance from London.

Previous to the formation of the London Passenger Transport Board, the train service consisted of 102 Metropolitan Line trains and 82 South Harrow—Uxbridge shuttle service trains daily, a total of 184 trains or 968 cars a day. In the new train service there are 138 Metropolitan, and 176 Piccadilly trains, or 314 trains (1,946 cars) a day.

When the Metropolitan Line programme has been completed the journey times will be:—

	Min.
Baker Street	39
Oxford Circus	43
Piccadilly Circus	46
Hammersmith	37
Charing Cross	49
Waterloo	51
Moorgate	52

The New Station

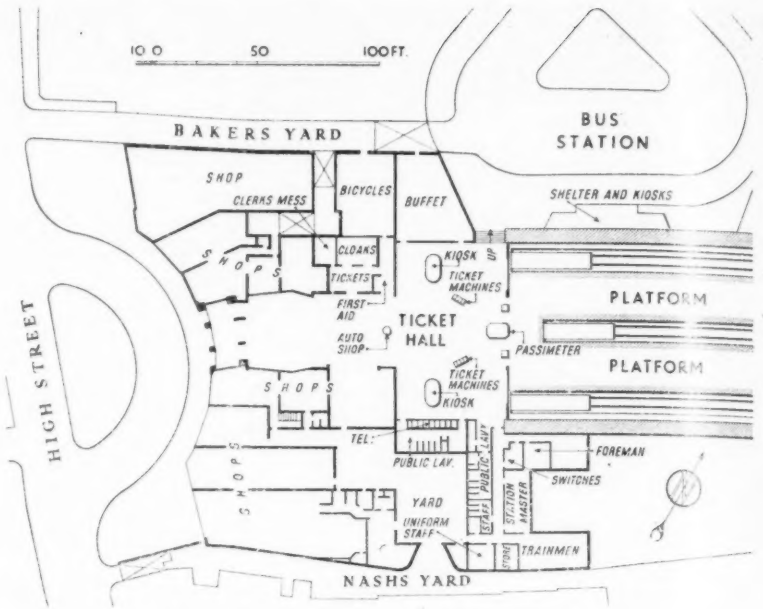
To reach the new station, 3 furlongs 8 chains of new line have had to be built in cutting, necessitating the construction of concrete retaining walls varying in height from 6 ft. to 30 ft. above rail level. A new bridge has been constructed to carry York Road over the railway and provision has been made for widening the road in the future. The station has three platform lines, each of which can accommodate an eight-car train. The new platforms are at street level and are covered with a reinforced concrete roof. The completed station will be of modern design, new and old materials being combined with due regard to their use and beauty and to the pleasant brick tradition prevailing in the town of Uxbridge. The wide circular recessed frontage to High Street will be in warm-toned Buckinghamshire bricks, surmounted in the centre by two pieces of sculpture symbolical of transport services.

All the work has been done whilst the existing services were maintained. This has necessitated two stages:—

(1) New cutting, platforms and station building; the work has been so arranged as to preserve the shops on the frontage until accommodation in the new station building is available.

(2) Demolition of old station and rearrangement of tracks to provide carriage sidings on site of old goods yard; construction of bus station in conjunction with the council's Belmont Road improvement scheme, which includes a car park.

The board has introduced its standard power signalling in place of the former electro-mechanical system. This is housed in a modern building which commands a view of the running line, cutting, and the car sidings. The whole work has given direct employment to an average of 100 men for a period of about 20 months to date.



Plan of new station at Uxbridge, L.P.T.B.

Rubber Springs

In the eighteen forties the art of vulcanising rubber having produced a material with unprecedented capabilities for shock absorption, engineers saw the possibility of using it for railway springs and many designs were prepared and tried by different people, but it was not until August 2, 1852, when British Patent No. 13951/1852 was granted to George Spencer for his design of springs for railway carriages, &c., that a lasting system was reached.

Previous inventors had not been quite right in their conception of the best method of arranging the material and in the amount of duty which could satisfactorily be placed upon it, and George Spencer produced the first arrangement of rubber in which the design was practical, as has been proved by long experience.

In order to ensure that his springs were of the most suitable quality, George Spencer obtained springs made by all the English manufacturers and conducted large numbers of tests to determine which of them best suited his purpose. He choose finally the product of Stephen Moulton of Bradford-on-Avon and all springs to his design were made by Moulton. When George Spencer died in 1891 and the business was carried on by his sons Alfred, Alexander, and Frank Spencer, who arranged the amalgamation of the interests of George Spencer, who designed the springs, with those of Stephen Moulton, the rubber manufacturer.

Today the firm of George Spencer, Moulton & Co. Ltd. manufactures the rubber springs, &c., made to the company's designs. With comparatively few exceptions all rubber parts used in rolling stock were invented, designed, introduced, and manufactured by this firm. For this reason designers and engineers from all parts of the world often invite Spencer-Moulton's co-operation.

In view of the rapid strides which are being taken in the use of electric traction, diesel electric locomotives, and direct-driven diesel engines, applications of india rubber to engine mountings, and so forth, are being developed. The numbers of persons interested in the application of rubber to railways have increased very greatly within the last few years, and we understand that engineers who are on leave in this country from the Colonies and elsewhere are always welcomed by Spencer Moulton and invited to discuss the operation of designs in service so that assistance may be afforded by the firm in regard to any difficulties encountered in the application of rubber.

L.N.E.R. (G.N. Section) Athletic Association Dinner

Mr. William Whitelaw and Sir Ronald Matthews on the road-rail situation in relation to railway staff

Mr. William Whitelaw, Chairman of the L.N.E.R. from 1923 until the end of September this year, and Sir Ronald W. Matthews, the present Chairman, spoke upon the present road-rail situation in its relation to railway staff at the annual dinner and dance of the L.N.E.R. (G.N. Section) Athletic Society on November 25. The function was held at the Abercorn Rooms, Great Eastern Hotel, E.C.2. Sir Ronald Matthews was in the chair. Among those present were:—

Sir Ronald W. Matthews, Mr. William Whitelaw; Mr. G. Kitson, Mr. L. Kitson; Mr. G. B. Barton, Mr. Birkbeck, Messrs. W. E. Blakey, C. J. Brown, F. W. Carr, E. A. Clear, E. Coleby, H. R. Cripps, R. O. J. Dallmeyer, L. C. Glenister, A. J. Grinling, W. H. Hanscombe, E. L. Hawkins, G. S. Inglis, W. H. Johnson, J. A. Kay, D. R. Lamb, G. Marshall, W. R. Mole, H. W. H. Richards, A. P. Ross, Mr. Procter Smith, Messrs. J. C. L. Train, G. F. Thurston, O. V. Bulleid.

Messrs. H. Collings, O. H. Corble, F. Downes, H. Ireland, H. S. Owen, F. Robbins, C. Slade, G. Woodhouse, W. Gaythorne Young.

Sir Ronald Matthews, having proposed the loyal toast, said that an apology for not being able to take the chair had been received from the President of the society, the Hon. Rupert E. Beckett, who had been far from well for several weeks and was unable to fulfil his public engagements. Mr. Beckett was now convalescing, and he was sure he would be expressing the feelings of all in wishing him a very speedy recovery. Apologies for not being able to attend had also been received from Sir Ralph Wedgwood, and Sir Nigel Gresley.

Mr. William Whitelaw, on rising to propose the toast of "The London & North Eastern Railway," was received with "For He's a Jolly Good Fellow" and a spontaneous toast not shown on the toast list. Mr. Whitelaw said that from time to time he had told them of the problems and difficulties of their company and of all the railways. He was sorry to say those troubles were now greater than they had ever been before. Somewhere about the middle of last March business in this country collapsed. The reason was the sudden beginning of the tremendous European crisis, the first phase of which ended only upon September 30 last. Added to that there was the impossibility of the railways attaining anything approaching prosperity so long as they were faced with the monstrous injustice with which they had to compete from road transport. But although things were very dark they must not be afraid. "Go ahead," said Mr. Whitelaw, "and do your work in faith, and the determination to do the best for yourselves and for the company."

There was nothing he hated more than hearing it said, "I won't do that, it's not my job." In an emergency any job and every job was everybody's job. That was the spirit in which to face these difficult times.

He had only one thing to add, and that was that he was happy to be able to tell them that in his successor they had got one of the soundest business men in the United Kingdom. That was what the railway required, and that was what the company had got, and he asked them to give Sir Ronald Matthews the same constant support and loyalty that it had been his own privilege to receive from them. "Give all your strength to those who are directing the affairs of this great company," Mr. Whitelaw concluded. "Difficulties are very great, but I can assure you nothing shall be wanting from my old colleagues to do whatever is just and fair to the staff, and make things as good as they can be for all who are concerned with the affairs of the railway. I ask you to give of your best, your most loyal service to Sir Ronald, who has succeeded me, and who with your help will bring back to your old company a reasonable measure of success."

Sir Ronald Matthews, replying to the toast, thanked Mr. Whitelaw for his words of sound common sense—words which they might have expected of him with his magnificent record as a railway Director and Chairman. For his own part, he wanted to say something about the policy of the railways in attempting to stem the tide of misfortune in which they had been engulfed in the last few months. What must be noticed with apprehension was that although there had been a distinct falling off in trade, there had also been a tendency to recovery in which the railways, through their traffics, had not shared. Those were the conditions which they felt must be dealt with drastically if there was to be the recovery in the fortunes of the railways which was essential for the prosperity of the country. They approached the problem in no spirit of hostility to the road interests. They realised that the road transport organisations had a very important part in the whole transport service of the country. But what the railways did resent, and resent most bitterly was that they should have to attempt to sell their product—transport of men and materials—under conditions of grossly unfair competition.

"At the present time," Sir Ronald Matthews continued, "we are in the position of a man fighting with his hands tied behind his back, and all we really ask is that we should be placed in the same position as our competitors. We have no objection to any restrictions that it may be felt necessary to place on the railway companies in the public interest provided our competitors are subject to exactly the same restrictions, and in such circumstances we feel we are in a position to render such services to the travelling public and the industrial community as will enable us to regain all the ground that has been lost, and play our part in the welfare and well-being of the country.

"I want you to understand how grossly unfair the present position is to our own employees. As long as that competition is allowed to exist it may mean curtailment of services and reduction in the number of persons employed. It is grossly unfair to shareholders and stockholders who contributed the funds enabling this great railway system to be built up—stockholders who for years in many cases have gone without any return on their capital invested. And I want you to realise the danger to the people of this country which may arise in a time of national emergency if there is a railway system not efficient to the last degree. Such things are outside our control. We must have the help of His Majesty's Government. We cannot control unfair conditions of competition, but one thing we can do within our own financial limitations, and that is to ensure that we render to all who use our railways the best and most efficient service we are capable of giving.

"It is up to every one of us in whatever capacity we serve the railway to put our backs into our work and do everything we can to ensure we serve our customers to the best of our ability. And if we do that, and maintain the happy spirit of co-operation which is such an outstanding feature of this railway company, and which we owe in such vast measure to the efforts of Mr. Whitelaw, our first Chairman, in welding all the companies into an harmonious whole, then I feel sure that we shall overcome our difficulties, and this great railway will go forward from strength to strength."

Mr. G. H. Kitson proposed "The London & North Eastern Railway Athletic Association," and thanked Mr. Whitelaw and Sir Ronald Matthews for performing a great service to their own company and the railways in general. The athletic association was founded in 1890, and it was very well worth keeping going for much more than another 48 years.

Mr. A. P. Ross, Chairman of the association, replied to the toast, and read a telephone message from Sir Nigel Gresley expressing his good wishes for the success of the evening. Mr. Ross referred to the good work of Mr. Stone, who had resigned after 14 years as Secretary of the society, and thanked the present Secretary, Mr. P. Scott, for his arrangements in connection with the dinner.

Sir Ronald Matthews then presented the cups and other trophies competed for during the year, and the evening concluded with dancing.

XUM

Central European Transport

In connection with the various frontier changes between Czechoslovakia and neighbouring countries, we have compiled the following supplemental notes bringing up to date the information previously published in our columns. The map on page 902 of our November 25 issue enables the routes mentioned to be traced in relation to the new conditions.

Sudetenland.—Many local and semi-local services are now restored. The main east—west line in the ceded territory is that between Reichenberg and Eger, *via* Bodenbach and Karlsbad. On this the rail services now operating include Bodenbach—Eger, Bodenbach—Karlsbad, Karlsbad—Eger, and Bodenbach—Reichenberg. The German visa issued to holders of British passports is valid for Sudetenland.

Berlin—Prague.—Through trains are now working from Berlin (Anhalt) to Prague (Masaryk) *via* Dresden, leaving Berlin at 1.44 p.m. and arriving at Prague at 9.36 p.m., and leaving Prague at 7.55 a.m. and arriving at Berlin at 3.8 p.m.

Vienna—Prague. — The through trains are: leave Vienna (Franz Josef) at 7.35 a.m. and arrive at Prague (Wilson) at 1.40 p.m., and leave Prague at 6.32 a.m. and reach Vienna at 12.32 p.m.

Prague—Paris.—A through train leaves Prague (Wilson) at 10.50 a.m. for Pilsen, Eger, and Paris. From Paris (Est) there is a departure at 5.40 p.m. for Eger, Pilson, and Prague.

Breslau — Vienna "Privileged" Trains.—The following Reichsbahn trains are now running between Breslau and Vienna under the "privileged" arrangement, whereby passport, customs, and currency examinations are dispensed with: Leaving Breslau at 6.45 a.m. for Vienna (Nord), which is reached at 2.45 p.m.; Breslau at 2.26 p.m. for Vienna (Ost), reached at 10.30 p.m.; Vienna (Nord) at 8.10 a.m., for Breslau, reached at 4.21 p.m.; and Vienna (Ost) at 3.0 p.m. for Breslau, reached at 11.3 p.m.

Orient Express.—The Orient Express at present runs from Vienna *via* Hegyeshalom frontier to Budapest and not, as formerly, *via* Pressburg (Bratislava). Reference to this change was made on page 834 of our issue of November 11, when the paragraph (somewhat misleadingly) followed our notes on the revision of the Simplon—Orient route —an entirely separate matter.

Austrian—Polish Traffic. — A new German—Polish trade agreement, replacing the former Polish—German and Polish—Austrian agreements, came into force on September 1, and will operate for 2½ years, until February 28, 1941. Reductions have been agreed to on 286 items of the tariff (hitherto 70). Under this agreement Poland is permitted to continue to export the 800,000 tons of pit coal hitherto sent to Austria, but not to transport it *via* Czechoslovakia; the coal is to be consigned "free at German—Polish frontier," and the goods traffic from Poland sent entirely by the German instead of partly by the Czechoslovak railway system, though this is a roundabout route to Austria. In view of the new transit arrangements through Czech territory now being made, however, it is expected that transport will soon be diverted to the Brünn route.

Reichsautobahn through Czechoslovakia.—A further transit facility between Silesia and Austria will be provided eventually by a new motor road between Breslau and Vienna, the construction of which was the subject of an agreement on November 21 between the German and Czechoslovak Governments. It will occupy what is virtually a German corridor, 40 miles long and 64 yds. wide, through the narrow part of Czechoslovakia in the neighbourhood of Brünn. The work, which is being taken in hand immediately by the Reichsautobahn Gesellschaft, is to be completed by 1940.

In connection with our editorial on the Czechoslovak Railways in 1937 (THE RAILWAY GAZETTE, October 28, page 715) it should be noted that the figures shown in the table as referring to 1938 were actually those of 1936, the former date being shown by a misprint.

MINERAL AGGREGATES, SANDS AND FILLERS.—A new British Standard Specification (No. 812) has just been issued for methods for the sampling and testing of mineral aggregates, sands and fillers. Copies may be obtained from the British Standards Institution, 28, Victoria Street, S.W.1, price 3s. 8d. post free.

Three typical Reichsbahn posters for Great Britain. The first is one of the few examples of "railway" subjects, as most are primarily "tourist." The middle poster is doubtless familiar to all users of the London underground railways. The right-hand picture is one of an impressive new batch for the winter season

M'Lintock Report on Northern Ireland Transport

Proposed new authority to amalgamate L.M.S.R. (N.C.C.) and Belfast & County Down Railways with Road Transport Board—Pooling with G.N.R. (Ireland)

The report of the M'Lintock Committee on road and railway transport in Northern Ireland, which recently conducted an inquiry into the operation of the Road Transport Act, together with the report of the public inquiry by the Recorder of Belfast, were laid on the table of the Northern House of Commons on November 24.

The committee, of which Sir William M'Lintock was Chairman, recommends the amalgamation of the present Road Transport Board with the railway systems of the L.M.S.R. (Northern Counties Committee), and the Belfast & County Down Railway. It declares it would be satisfactory if a complete amalgamation could be effected by the inclusion of that part of the Great Northern Railway system which operates in Northern Ireland, so dispensing with the necessity of a pooling scheme, but the case against the inclusion of the Great Northern is so formidable that there is no alternative. (The reference to the G.N.R. (I.) is deemed to include the Sligo, Leitrim & Northern Counties Railway, unless both are referred to in the same context.) It recommends, therefore, a pooling scheme between the Great Northern Railway and the new body, which would control the other two railways and the Road Transport Board, and declares that the new body would not contain the same seeds of discord as are inherent in the scheme under the 1935 Act. The committee also recommends that eventually the tramway and omnibus services of the Belfast Corporation should be merged with the new body when conditions are suitable.

There is little hope of the railways and the Road Transport Board reaching final agreement on the pool accounts for 1936 and subsequent years, and settlement by arbitration would be a complicated, costly, and lengthy process. "The experiment," the report states, "of attempting to co-ordinate road and rail transport by means of a pooling scheme during a period of transition from unregulated to organised road transport has been a complete failure."

The Road Transport Board had a deficiency at September 30, 1938, estimated to amount to £464,000, and as it is unlikely to make a profit on its freight operations under present conditions, the accumulation of a deficiency is likely to continue. The report expresses the view that the earnings to be derived from public transport in Northern Ireland are never likely to be sufficient to support the Transport Board's capital of £4,000,000 and the railway capital of £11,000,000, and adds, "the Government will be called upon to implement its present guarantee in respect of the board's borrowings, and it is difficult to see how it can avoid accepting the obligation to provide the additional finance which will be necessary and which is likely to bring the amount of its commitment up to a total of £3,150,000 or more. The Government is, therefore, bound, in effect, to have a preponderating interest in the ownership of the board's undertaking."

Regarding the amalgamation of the two railways and the Transport Board, the report recommends that the undertakings of the merging parties be acquired for a consideration payable in the capital stocks of the new body. The stocks in the new body would be available for distribution to (*a*) the Northern Ireland Government in satisfaction of the liability that will be created by a fulfilment of its guarantee of bank loans; (*b*) the holders of Transport "A" stocks; and (*c*) the holders of Transport "B" stock. If the Government accepts the obligation to finance the board's further requirements until a new scheme can become effective, the total amount of the capital would be £4,000,000, as follows: Northern Ireland Government £3,155,701; "A" stock £410,469; "B" stock £433,830.

The stocks allocated as consideration for the transfer of the undertaking of the L.M.S.R. (N.C.C.) would be issued to the London Midland & Scottish Railway Company. The stocks allocated to the Belfast & County Down Railway would be available for distribution to the stockholders of that company. It would be necessary to make arrangements for distributing the stock of the new body to the parties interested in each case, either on an agreed basis or as might be determined by arbitration.

Excess of Transport

Transport facilities in Northern Ireland, the report states, as represented by both road and rail services and by private and public transport, are greatly in excess of the country's needs; and the capital, the consideration paid by the board for acquired undertakings, and the cost of private transport, considered in the light of present day conditions, is more than can reasonably expect to find adequate remuneration out of the value of the services rendered.

It is therefore necessary, the report continues, to face the fact that capital invested in the transport industry has been partly lost, and to ensure that the capital value of the organised transport in the future should bear some relation to the transport needs of the community and to the value of the services rendered. It was not within the committee's province to determine the values that should be attached to the various interests involved. It would probably be necessary to make statutory provision for the dissolution of the board and the Belfast & County Down Railway Company, and for the preparation of separate schemes for distributing the stock of the new body to the parties interested in each case, either on agreed basis or as might be determined by arbitration. The board and the Belfast & County Down Railway Company would cease to exist, and the stocks of the new body would be held by:—

(1) The Northern Ireland Government;

(2) The London Midland & Scottish Railway Company;

(3) The persons who at present hold stocks in the board and in the Belfast & County Down Railway Company; and

(4) The Great Northern Railway Company (Ireland).

As regards the extent of the amalgamation, the report suggests that it should embrace the whole of the undertakings of the merging parties with the possible exception (at the option of the railway companies) of their hotels and other property not forming part of the railways, but not excluding houses and cottages for the companies' servants.

The New Board

It is recommended that the new body should have a small board consisting of not fewer than six or more than eight members, including a General Manager as the only member who would hold a full-time executive position in the organisation. So long as the Northern Ireland Government holds one-third or more of the equity stock of the new body, it should have the right to nominate one half of the members of the board other than the Chairman and the General Manager.

The other half of the members of the board (apart from the Chairman and the General Manager) should be nominated in the first instance by the railway companies acting jointly, and should in rotation be subject to retirement at an annual general meeting of the equity stockholders. For this purpose the Government should not be entitled to vote so long as it retained the right to nominate members of the board in the circumstances indicated.

Casual vacancies in the number of members originally appointed on the nomination of the railways should be filled on the nomination of the remaining members or members so appointed.

The Chairman should be a person of some standing who would command general respect from the community in Northern Ireland. He should be nominated by the other members of the board, and in the event of an equality of voting the appointment would be made at a meeting of equity stockholders at which the Government would

be entitled to vote so long as it held any equity stock. A casual vacancy in the office of Chairman would be filled by nomination of the other members of the board, and at all times the appointment of the Chairman would be subject to the approval of the Government.

The Chairman would have a casting vote, and he would be subject to retirement every five years, say, and be eligible for reappointment at an annual general meeting of the equity stockholders.

The General Manager would be appointed by the board and would remain a member of the board so long as he held the office of General Manager. He should be a person with experience of both road and rail public transport—preferably including experience of road freight transport—but above all, he should be a person who has shown some capacity in control of a large business organisation.

Borrowing Powers

The new body, like the present board, should have the status of a public authority. An annual meeting of the equity stockholders would be held immediately after publication of the accounts for the previous year in order to re-elect or appoint members of the board or the Chairman in the manner we have indicated. As the new body cannot be expected to reach a normal revenue-earning position until some years have elapsed, it should have limited powers to borrow temporarily for the purpose of paying interest on its prior stocks (which would constitute a comparatively small proportion of its total capital), and it might also require to borrow temporarily for other purposes. If it should prove necessary for the Government to guarantee such borrowings, any such guarantee should, in the committee's opinion, be limited not only as to period but also as to amount.

Licensing Proposals

The committee also proposes the introduction of a comprehensive scheme of licensing for private goods vehicles, the licences to be classed "A," "B," and "C," and to remain in force for three years, with an appeal to a Transport Appeal Tribunal against the grant, refusal, suspension or withdrawal by the licensing authority, the Ministry of Home Affairs. The withdrawal of the concession to farmers is recommended, the board being permitted to issue permits in respect of individual privately-owned vehicles for certain areas and periods.

Further proposals are the introduction of legislation providing substantial penalties for illegal operation of vehicles; and the modification of the exemption of passenger vehicles licensed to carry not more than six persons to such extent as may be necessary to prevent passengers being carried at individual fares in competition with public transport.

STAFF AND LABOUR MATTERS

Railway Wages

A momentous decision was reached last week by the three railway trade unions, for (as reported on page 920 of our issue of Friday last) their claims for improvements in rates of pay and conditions of service are to be referred for determination to the Railway Staff National Tribunal, which is the final stage in the agreed machinery of negotiation. The claims, which are sweeping, and in the case of one of the unions include a demand for a 40-hour week, were submitted earlier in the year to the four main-line railway companies, who have given them careful examination and consideration, but felt bound to give them a negative reply.

The unions then referred the claims to the Railway Staff National Council, but before that body met, the General Managers took the unusual step of inviting the trade unions' executive committees to a special meeting when the present and prospective economic position of the railway industry was frankly explained. It was pointed out that the decline in gross revenue amounted to £5 million for the first 43 weeks, and in view of the increased expenditure on wages and materials, the prospects are that the diminution in net revenue will be even more marked than in gross revenue. The general managers made it clear that if the complete figures for the year 1939 are not more favourable than those now expected, it will be necessary to make application for some relief in labour costs.

We learn it is unlikely that the tribunal will hear and decide the unions' claims before Christmas.

R.O.D. Annual Dinner

The seventeenth annual Officers' Reunion Dinner of the Royal Engineers (Railway Operating Division) took place at the Trocadero Restaurant, London, on November 25. Lieut.-Colonel K. R. N. Speir presided over a gathering which included the following:—

Lt.-Colonel V. M. Barrington-Ward, Captains F. L. Castle, J. Clubley-Armstrong, H. W. Crosthwait, A. D. Cook, Mr. G. D. Cornfoot, Sir Francis H. Dent, Captain C. Grasemann, Brig.-Gen. F. D. Hammond, Captain F. Horler, Lieut. C. H. Hills, Lt.-Colonel G. S. Lynde, Colonel R. E. L. Maunsell, Captain H. E. Morgan, Lieut. A. C. S. Maunsell, Major R. F. Morkill, Major J. Haggie Patterton, Captain R. M. T. Richards, Captain M. D. Robinson, Major E. W. Rostern, Major H. G. Scott, Mr. L. M. Scott, Lt.-General Sir Richard M. Stuart-Wortley, Major R. O. Squarey, Mr. W. L. Stephenson, Captain L. Trevor-Jones, Major H. G. Thynne, Mr. David Way, and Captain W. A. Willox.

Colonel Speir, after the loyal toast, proposed "Absent Friends."

Sir Francis Dent, proposing the toast of General Sir Richard Stuart-Wortley, spoke with high appreciation of his outstanding services. He was really the father of the R.O.D., without whose initiative and energy the R.O.D. might not have come into being.

General Stuart-Wortley briefly responded, paying a tribute to the ready and able support he had at that difficult time received from the British railway general managers.

Captain C. Grasemann briefly reported the activities of the committee which had been formed to assume responsibility for the annual dinners, and Colonel Speir voiced the feelings of the members in expressing thanks to the members of the committee, Captain Grasemann, Captain Richards, and Captain Clubley-Armstrong for their work.

Southern Railway Musical Society

From Wednesday to Saturday of last week, the Southern Railway Musical Society gave four evening performances at the Fortune Theatre, of the romantic light opera, "The Duchess of Dantzic." This was the society's sixteenth operatic production, and fully maintained the high standard that has come to be associated with this company's work. The society staged its first Fortune Theatre production in January, 1934 (in preference to the larger Scala Theatre previously used), and on all subsequent occasions has enjoyed the friendly atmosphere promoted by the smaller house. Both staging and musical direction were in the capable hands of Mr. George Hay, whose casting was particularly happy. Miss Doris James (who bears a marked resemblance to a well-known professional actress and operatic singer), gave a vivacious performance as Catherine Upscher, otherwise *La Sans-Gêne*, who became the Duchess of Dantzic. Napoleon was effectively portrayed by Mr. Will F. Young; the Vicomte de Béthune, and later his own son, by Mr. T. G. Pile; François Lefebvre, at first a sergeant, and afterwards a maréchal of France, by Mr. George Brodrick; and Papillon, a pedlar who became court milliner, by Mr. Victor W. Foord. They were adequately supported by other players, and by an effective chorus and orchestra. On Friday evening, the performance was witnessed by a large number of guests invited by the General Manager and chief officers of the Southern Railway.

Bridge Over North Circular Road, Wembley, L.M.S.R.—A new four-span bridge is to be built by the L.M.S.R. across the North Circular Road at Stonebridge Park, Wembley, to carry two lines forming part of the extensive scheme for new carriage accommodation in the Willesden area.

Transport Situation in France

Railways placed temporarily under Government control after threat of strike as protest against economy decrees

Numerous Decrees, published in the *Journal Officiel* of November 13, forming the financial and economic programme of M. Paul Reynaud, Minister of Finance, for the restoration of the national finances, include measures relative to the reorganisation of transport in the Paris district and to the National Railways Company (S.N.C.F.).

One Degree institutes a Paris Transport Board in the form of a Comité des Transports parisiens, charged with the duty of reorganising and unifying the passenger traffic of the Metro, the Paris omnibus company and the suburban lines of the S.N.C.F., which are stated to be responsible for an annual deficit of fr. 1,000 million. The board will have full powers to regulate fares, the transport systems, timetables, programmes of works and of material, and contracts of all kinds. Its decisions to fix fares or to close or construct lines must, however, be approved by the Minister of Public Works before becoming effective.

Rise in Metro and Bus Fares

Meanwhile another Decree stipulates that Metro and bus fares are to be raised 30 per cent. The rise will take place in two stages, the first within ten days after publication of the Decree and the second within a year at the latest. Consequently the Metro fare, which is a flat rate for the entire underground system, has already been increased, for the second class from fr. 1 10 c. to fr. 1 30 c. and for the first class from fr. 1 60 c. to fr. 1 90 c. Concurrently, the book of twenty bus tickets formerly costing nine francs has been raised to fr. 10 50 c. Within a year and possibly much earlier the Metro second class fare will be fr. 1 50 c. and the first class fr. 2 15 c. The book of twenty bus tickets will then cost fr. 12 0 c.

No Increase in Railway Fares

M. de Monzie, Minister of Public Works, commenting on the Decrees relative to the railways, said that there will be no increase in railway fares. He added that no railwaymen would be dismissed on grounds of economy, as the Minister of Finance had taken into account the fact that the S.N.C.F. during 1938 had already reduced its staff by the policy of not replacing men who retired on pension. Auxiliary workers would be treated as hitherto, engaged or dismissed according to the needs of the service. Altogether, the reduction of the staff this year totalled 25,000. Application of the 40-hr. working week had made it necessary to engage nearly 100,000 additional men last year, involving an extra annual expenditure of fr. 1,600 million. A new Decree, while maintaining the principle of the 40-hr. week, makes its application more flexible. Apparently the readjustment of working hours given in detail in the Decree, makes it possible to dispense with the services of large numbers of men.

Accordingly, the Decree stipulates that railwaymen who are available may be transferred to factories and workshops engaged in national defence work. Such men will retain all their privileges as railwaymen, including pension rights, promotion, and railway travel facilities.

General Strike Decision

The Railwaymen's Federation passed a resolution protesting against the new Decrees, and also decided to order railway workers to join in the general strike declared by the General Labour Confederation for Wednesday, November 30. The Railwaymen's Federation further decided that work should be suspended on that day from 4 a.m. to 7 p.m., but that workers should be present at their posts to assure order and safety on the lines.

On its side the Government took measures to ensure the operation of the railways. By a Decree dated November 27, the railways were requisitioned and the workers thus placed virtually under military control. In a broadcast address the same day, M. de Monzie warned the railway workers against breaking their labour contracts and the responsibility they would incur in attempting to stop the train services.

Failure of Strike

On the day of the strike the number of absentees from their posts on the railways was insignificant, and beyond one or two demonstrations by advocates of passive resistance who adopted recumbent positions on the permanent way at Paris stations, no incidents were reported. Omnibus and underground facilities in Paris were normal, and throughout the country all essential services were virtually unaffected. The presence of Gardes Mobiles at stations soon countered the intention expressed by railway workers in some places to report for duty but remain idle at their posts.

Railway Budget Economies

In framing his financial plans, M. Paul Reynaud discussed the railway budget with M. Guinand, President of the board of the S.N.C.F., who was accompanied by M. Le Besnerais, General Manager. Later, it was announced that M. de Monzie, Minister of Public Works, had made a further scrutiny of the railway budget for 1939 and had reduced expenditure by an additional fr. 110,000,000. This brought the S.N.C.F. economies up to fr. 838,000,000 and reduced the deficit, after inclusion of fr. 727,000,000 debt charges, to fr. 618,000,000. The operating account shows an estimated profit of fr. 144,000,000. The residual deficit represents only 3·5 per cent. of the probable receipts indicating that the possibility of balancing the railway budget may not be far distant.

A number of posts held by high officials in the Railway Department of the Ministry of Public Works have been suppressed. Some 220 minor officials are transferred to the transport service as inspectors

Four-Year Railway Plan

The S.N.C.F. is authorised to undertake a four-year plan of railway works, acquisition of rolling stock and equipment, with a total expenditure of fr. 4,000 million spread over the years 1940 to 1943 inclusive. The plan must include only works calculated to reduce operating expenses, and must be submitted for approval before December 31, 1938.

Completion of Vosges Tunnel

Under the railway Decree, the Minister of Public Works is authorised to draw up agreements with the S.N.C.F. and local authorities for the completion of the railway tunnel through the Vosges from Saint-Maurice to Wesserling. Work on this tunnel was stopped due to the exhaustion of the allotted funds, the difficulty of piercing the hard rock having proved greater than anticipated.

Exports of Railway Material from the United Kingdom in October

	Oct., 1938	Oct., 1937	Ten Months Ending Oct., 1938	Ten Months Ending Oct., 1937
	£	£	£	£
Locomotives, rail	118,200	37,715	1,329,352	865,443
Carriages and wagons	252,209	197,619	2,645,227	2,448,906
Rails, steel	110,243	81,397	970,038	1,155,222
Wheels, sleepers, fishplates and miscellaneous materials	158,163	218,215	1,809,772	1,385,951

Locomotive and rail exports included the following :—

	Locomotives		Rails	
	Oct., 1938	Oct., 1937	Oct., 1938	Oct., 1937
	£	£	£	£
Argentina	5,768	5,304	8,321	5,713
Union of South Africa	—*	—*	21,574	8,779
British India	27,467	9,960	9,799	12,272

* Figures not available

QUESTIONS IN PARLIAMENT

Shanghai-Nanking Railway

Mr. A. C. Moreing (Preston—C.), in November 21, asked the Prime Minister whether he had yet received a satisfactory reply from the Japanese Government to the representations of His Majesty's Government that an opportunity should be afforded to the representatives of the British bondholders of the Shanghai-Nanking Railway to inspect the railway line, and that the necessary measures should be taken to safeguard their financial interests in the line.

Mr. R. A. Butler (Under Secretary of State for Foreign Affairs): In his conversations with the Japanese Minister for Foreign Affairs last September, His Majesty's Ambassador at Tokyo was informed that there were difficulties of a military character in the way of a comprehensive grant of inspection facilities on this and other Chinese railways: an inspection of the Shanghai North railway station had, however, been permitted. Both the question of inspection and that of the financial interests of the bondholders are being considered by the Japanese Government and a definite reply has been promised.

Protection for Palestine Railwaymen

Mr. F. B. Simpson (Ashton-under-Lyne—Lab.), on November 23, asked the Secretary of State for the Colonies if he would enquire as to the security, protection, and general working conditions of the Palestine railwaymen; and ensure that representations from the railwaymen's union were heard by the Government of Palestine in regard to their difficulties at the moment.

Mr. Malcolm MacDonald (Sec. of State for the Colonies): I have recently received a report from the High Commissioner on the measures taken to protect the railway employees, and am satisfied that every effort is made to secure adequate protection for them. Unfortunately, it is in present circumstances impossible to devise means of affording them complete security, and I would like to take this opportunity of paying a tribute to the courage with which they have carried out their duties during the present troubles in Palestine. As regards the second part of the question, I have no doubt that the Palestine Government will be prepared to consider any representations made to it by the railway employees, but I understand that the railwaymen's union has not yet complied with the conditions which would make it possible for the Government to accord it official recognition.

Brazilian Railway Capital

Mr. W. S. Liddell (Lincoln—C.), on November 23, asked the Prime Minister whether, in view of the depreciation of investments in Brazilian public loans and railway capital raised in London, amounting in all to approximately £100,000,000, and the disinclination of British commerce to embark upon further transactions with Brazil involving credit, he would reduce British ambassadorial representation in Brazil to the status of a consulate pending an agreed debt arrangement between the Brazilian authorities and the British Government acting on behalf of British subjects who have entrusted their savings to Brazil.

Mr. R. A. Butler (Under-Secretary of State for Foreign Affairs): According to a recent published statement by the President of Brazil, the Brazilian Government continues to be ready to examine with the interested parties any practical scheme which may benefit the creditors of Brazil and respect the interests of the national economy of that country. As I informed my hon. friend on June 20 last, His Majesty's Government will continue to give their fullest support to the Council of Foreign Bondholders in its efforts to secure acceptable proposals from the Brazilian Government. My noble friend does not, however, consider that the interests of the British holders of Brazilian loans and investments would be served by a reduction in the status of the representation of this country in Brazil.

Cowlairs and St. Rollox Works

Mrs. Hardie (Springburn—Lab.), on November 24, asked the Minister of Transport if he was aware that railway shopmen were being dismissed from Cowlairs and St. Rollox works, in spite of the fact that large quantities of railway stock required renewing and reconditioning; and would he consult with the railways concerned to get them to carry out necessary improvements and prevent skilled workers being thrown out of employment.

Captain Austin Hudson (Parliamentary Secretary to the Ministry of Transport): I am informed by the L.N.E.R. and the L.M.S.R. Companies that owing to the recent heavy decline in railway traffic and the consequent reduction in the amount of rolling stock required, it has been found necessary to reduce the staff in the companies workshops at Cowlairs and St. Rollox. The companies assure me that no necessary repair work has been deferred.

Drowning Accidents at Firhill

Mr. J. J. Davidson (Maryhill—Lab.), on November 29, asked the Secretary of State for Scotland if he would state the number of children drowned in the timber basin, Firhill, Forth & Clyde Canal, during the past year; and what steps were being taken to prevent future fatalities.

Mr. D. J. Colville (Secretary of State for Scotland): One boy was drowned in this basin during the year ended October 31, 1938. I understand that during the last six months, the Corporation of Glasgow has been in communication about this basin with the L.M.S.R., which is the owner, and that in September the Corporation suggested to the railway company that it should consider the question of erecting fences. So far the Corporation has received no definite reply, and I am suggesting that it should approach the railway company again.

Mr. Davidson: Is the Minister aware that a circular has been issued to Scottish members stating that eight children have been drowned in this basin during the past year; and will he, therefore, ask the Glasgow Corporation to expedite the matter and make progress with regard to this question?

Mr. Colville: I cannot say that I have seen the circular. I understand that only one boy was drowned this year, but there were further drownings the year before, and I am doing my best to expedite a decision in the matter.

Transport Charges

Mr. Ben Smith (Bermondsey, Rotherhithe—Lab.), on November 30, asked the Minister of Transport whether the railway companies had submitted any proposals to him for the regulation of transport charges generally in the event of a repeal of the existing statutory regulation of railway rates.

Dr. Leslie Burgin: No, sir.

Mr. David Morgan Adams (Poplar, S.—Lab.), on November 30, asked the Minister of Transport whether, in view of the recommendations of the Transport Advisory Council regarding rate fixing for the railway, road, inland waterway, and coastal services, he would undertake to maintain the restrictions on the fixing of railway rates.

Dr. Leslie Burgin: Quite obviously I am unable to make a statement on this matter at present. This question is receiving my close attention in the light both of the Reports of the Transport Advisory Council on Service and Rates and of the representations recently made to me by the railway companies.

Railway Receipts

Mr. Ben Smith (Bermondsey, Rotherhithe—Lab.), on November 30, asked the Minister of Transport how the aggregate net railway receipts of the four main-line companies for 1937 compared with those for 1923 and 1931, respectively.

Dr. Leslie Burgin (Minister of Transport): The aggregate net receipts from railway working of the four main-line railway companies in 1937 and 1931 were as follow:—

Year	£
1937	34,370,000
1931	29,894,000

Owing to the change in accounting practice of the railway companies in 1928, comparable figures for 1923 are not available from published returns but are estimated at £38,700,000.

Mr. Ben Smith (Bermondsey, Rotherhithe—Lab.), on November 30, asked the Minister of Transport whether he had any figures to show how far the decline in the receipts of the railway companies was due to the competition of road transport and how far it was

attributable to the general falling off in traffic caused by trade depression.

Dr. Leslie Burgin: No returns of traffic are made by the operators of goods vehicles on roads, and I have, therefore, no figures indicative of the extent to which traffic may have been diverted from the railways.

Transport Plans for an Emergency

Mr. W. T. Kelly (Rochdale—Lab.), on November 30, asked the Minister of Transport whether his department had prepared any plans for a national emergency which would involve the co-operation of the railway companies and the road-transport operators.

Dr. Leslie Burgin: Yes, sir. The plans for securing the most effective use of transport in an emergency involve the co-operation of all branches of transport. I take this opportunity of acknowledging the help I am receiving, in formulation of plans, from responsible representatives of all these branches.

Fire at Paddington Arrival Signal Box, G.W.R.

Electric power signalling put out of service
Emergency arrangements instituted

At about 2.0 a.m. on Friday, November 25, the signalman who was working on the main-line section of the Paddington Arrival signal box, detecting a peculiar smell and observing that smoke was issuing from the locking frame, telephoned to the Signal Department lineman, who was in an adjoining hut. The lineman immediately came to the signal box and operated the emergency switch in the under portion of the box to cut off the current. When the lineman came upstairs again the signalman had had to leave owing to the fumes. The lineman endeavoured to use the fire extinguisher, but both he and the signalman who was working on the suburban section of the box were driven out by the smoke and flames which issued from the frame when the lineman opened the wooden casing.

A district fire call was circulated, and several L.C.C. fire brigades attended and extinguished the fire, but not before the greater part of the electrical installation and the locking frame, block instruments, and telephones were destroyed. All signal lights were extinguished and the cables to the point machines were destroyed.

Time-interval working was instituted between Subway Junction and the Arrival box for up trains, all means of communication having been destroyed, and all points had to be worked by hand. All communication between Edgware Road and Paddington, and between Paddington and Westbourne Park was destroyed, and time-interval working was, therefore, also necessary on the adjacent Hammersmith & City Line.

The departure side of the station is operated by a separate Departure box, and owing to the interruption in the current supply the block instruments between that box and Westbourne Bridge box were put out of action temporarily, and all signal lamps of signals operated from that box were extinguished. It was, however, possible to bring this equipment into use after a short interval, enabling the Departure box to be worked normally except for the use of No. 6 platform, which is an "in-and-out" platform.

It was decided at once to discontinue the use of the suburban station for Great Western trains, and the L.P.T.B. Signal Engineer undertook first the disconnection of the trip cocks between Paddington and Westbourne Park to enable trains to be worked on the time-interval system, and then subsequently to take steps to institute automatic working so that within a few hours the Hammersmith & City Line trains were working normally. Thus, by terminating G.W. local trains at Westbourne Park, a service to Paddington or beyond from G.W. stations was provided.

Early morning passengers to town had to leave their trains at Ealing, as no traffic could be dealt with at the terminus until the emergency arrangements were sufficiently advanced, but from about 7.0 a.m. trains were worked in under caution. Serious delay was, however, unavoidable and modifications in the services had to be made. The general principle adopted was to terminate farther out such trains as could discharge their passengers to alternative routes. Thus the G.W.R. local steam services were terminated at Westbourne Park, or in some cases Ealing, passengers continuing their journey over the Hammersmith & City or Central London lines. Passengers using the joint G.W. and L.N.E. services were recommended to use Marylebone station. Certain semi-local services to Iver, Langley, Slough, and Windsor, were withdrawn, but alternative facilities were given. Every effort was made, however, and with marked success, to maintain the normal main-line services in and out of Paddington, subject to certain modifications of platform user and some inevitable delays. The availability of tickets was modified to allow of passengers using the alternative services *via* the London Transport routes, and notices were isued to this effect.

Temporary block instruments between the next signal box—Subway Junction—and Paddington Arrival were brought into use at 5.0 p.m. on Friday evening, and these, with the installation of loudspeaker equipment from a temporary block post to the various groups of points in the yard, made possible an accelerated acceptance of main-line trains. This improved working demonstrated that commencing with Saturday morning a service with very much less variation from the normal could be operated, and notices of such a service were issued on Friday night.

The emergency arrangements require the employment of 19 handsignalmen during the daytime, and 20 at night. It was realised at once that the situation would demand the services of skilled men to carry out these duties, and one of the first steps taken was to order all available relief signalmen from the outlying districts to come at once to Paddington.

The burnt out signal box—a description of which was included in our article on the all-electric signalling at Paddington in THE RAILWAY GAZETTE of December 1, 1933 (page 815)—contained the equivalent of 209 working levers, and it will take some months to replace the frame and subsidiary apparatus, which have already been ordered from the General Railway Signal Co. Ltd. The situation, therefore, looked far from promising until on the morning of Friday, November 25, Mr. W. S. Every, Signal Engineer to the London Passenger Transport Board, offered his assistance. As he had spare three small frames which could be converted into a whole frame of 141 levers, his offer was accepted and it was decided to place this in a temporary signal box on the top of the old battery house immediately adjoining the burnt-out box. This, it is hoped, to complete by Sunday, December 18, at the latest, so that the normal services will be in operation well before the Christmas rush.

Already the outside of the structure is finished and the temporary electrically-operated frame of 141 levers is installed. Work has begun on the fitting of the other electrical equipment and the wiring up of the complicated safety system which will control all incoming trains. This work alone will involve the use of over 50 miles of wire.

The cause of the fire is at present under investigation.

MEMORIAL TO THE INVENTOR OF PORTLAND CEMENT.—A plaque and gates at St. John's Church, Wakefield, to the memory of Joseph Aspdin, the inventor of Portland cement, were dedicated by the Bishop of Wakefield on Thursday of last week, November 24. The memorial was presented by the Cement & Concrete Association. Aspdin was a comparatively unknown man, and even in the local press, the patenting of his invention was accorded only one sentence in the *Leeds Mercury* of November 6, 1824, which said: "We hear that Joseph Aspdin, bricklayer of this town, has obtained a patent for a superior cement resembling Portland stone."

RAILWAY AND OTHER MEETINGS

Central Uruguay Railway Co. of Monte Video Ltd.

The ordinary general meeting of the Central Uruguay Railway Company of Monte Video Limited was held at River Plate House, Finsbury Circus, E.C., on November 29, Mr. G. H. Harrisson, C.M.G., Chairman of the company, presiding.

The Secretary (Mr. A. J. Medlycott) read the notice convening the meeting and the auditors' report.

The Chairman, before moving the adoption of the report and accounts, expressed the great regret felt at the death of Lt.-Colonel Woodbine Parish, a member of the board. Reviewing the company's results, it was pleasing, he said, to be able to lay before the stockholders, after the first year's operation since the amalgamation of the various companies forming the present Central Uruguay system, figures showing an increase in the net receipts of about £33,000. Though the results could not be looked upon as adequate remuneration for the capital employed or for the services rendered to the people of Uruguay, it was a small step in the right direction.

The profit for the year had enabled them to meet the interest on their first debenture stock and to set aside £114,726 to renewals, carrying forward £13,304. The most significant increase in receipts arose from passenger traffic, which had given excellent returns. Greater use had been made of the light petrol-driven motor-coaches, which enabled them to give a rapid and economical service, and one that was increasing in popularity with the public. Those vehicles were owned by the State railways and leased to the company on the basis of an agreed figure per coach-mile.

In the near future further additions of that type of service would be available by the introduction into traffic of a number of diesel cars which had arrived in Uruguay and had undergone preliminary trials. In addition, increasing numbers were carried by the special Phono-electric excursion trains, which continued to be a popular feature.

On the expenditure side there was an increase of 2 per cent., but on the whole expenditure had been maintained within close limits and did not call for any special comment. The bank loan and overdraft had been reduced from £240,000 to £60,000; in that they had been largely assisted by the sale of the Uruguayan Government five-year bonds realised at the beginning of the year.

A new reserve appeared this year for renewals. A careful study had been made of their most pressing requirements, resulting in a plan involving, in the first phase, expenditure of about £300,000, and it was gratifying to the board that the results of the past year had enabled them to apply £144,726 to that end. The reconstruction of several engines had been started and the opportunity had been taken to alter their design with the object of securing greater efficiency in terms of fuel consumption and to decrease the damaging effect of heavy axle-loads on rails which had already had long years of service in the track. The programme also covered the reconstruction of six passenger coaches and goods wagons.

Up to the present they had been able to avoid issuing any of the prior lien debentures authorised under the scheme of arrangement and were hoping that that necessity would be postponed, at any rate for some time. Their success in avoiding that largely depended upon a settlement of their claim against the Government of Uruguay for an amount due to them—arising from the rate of exchange at which the guarantees on the Eastern Extension had been calculated since 1935—and the sale of redundant land resulting from the abandonment of a short section of line through the city. To summarise, there were three matters of vital importance—an improvement in the rate of exchange, or at least the maintenance of the rates at present applied to their remittances; the co-ordination of transport, and the settlement of their outstanding claim against the Government in respect of the rate of exchange for the payment of past guarantees.

The report and accounts were adopted.

RAILWAY AND OTHER REPORTS

Assam-Bengal Railway Co. Ltd.—Gross earnings for the year ended March 31, 1938, amounted to Rs. 1,87,14,163, an increase of Rs. 6,16,606. In the working expenses of Rs. 1,56,44,707 there was a saving of Rs. 1,11,894, so that the operating ratio was reduced from 87·06 per cent. to 83·60 per cent. and the net earnings improved from Rs. 23,40,956 to Rs. 30,69,456. Ordinary working expenses, excluding replacements and renewals and payments to worked lines, were Rs. 1,22,05,422, or 65·22 per cent. of gross earnings. No surplus profits accrued in the year under review and the directors propose to carry forward the balance of £1,859 standing at credit of the stockholders' revenue account. Guaranteed interest at the rate of 3 per cent. (less income tax) on the company's stock capital of £1,500,000 was received from the Secretary of State during the year.

Waterloo & City Improvements

Improvement work on the Waterloo & City underground line of the Southern Railway was put in hand soon after a meeting held on December 20 last year between the Chairman, General Manager, and engineering representatives of the railway, and a deputation of regular passengers. The improvements sanctioned by the board were announced at that meeting, and reported in our issue of December 31. In accordance with a promise made to the Waterloo & City Railway Passengers' Protest Committee, the Southern Railway last Tuesday issued the following statement detailing the progress made so far:—

Provision of new rolling stock.—Tenders have been received for the complete replacement of rolling stock and a contract has been sanctioned by the board. The new stock will have considerably increased accommodation as compared with the existing. The stock will be fitted with power-operated doors and should eliminate queues during the peak hours.

Renewal of signalling arrangements, cables, and switchgear, and placing of conductor rail in new position.—Good progress has been made here; deliveries are now being made of materials for signalling alterations, specifications for cables and switchgear are nearing completion, and the new conductor rail has been designed and orders are about to be placed.

Certain other improvements such as welding of rail joints, noise-absorbing shields, &c.—Good progress has been made in the arrangements for carrying out this work, and contracts have been placed for rail welding.

Issue and collection of tickets at terminal points instead of in trains.—As previously stated, experimental ticket-issuing machines have been installed at each terminal station to give guidance as to the best means of issuing and collecting tickets during the rush hours.

Escalators at the Bank station.—As already stated, details have been agreed with the L.P.T.B. with regard to a three-way escalator at the Bank, with low-level access between the Waterloo & City Railway and the Central Line. The Southern Railway Bill which will be presented to Parliament before the end of the current year contains provisions for this matter.

NOTES AND NEWS

Home Railway Final Dividend Dates.—Final dividend announcements of the four main-line railway companies are expected to be made upon the following dates: February 6, Southern; February 8, London Midland & Scottish; February 10, Great Western; February 17, London & North Eastern.

London Transport "C" Stock.—It has been decided to form a representative committee of holders of London Transport "C" stock. A register of stockholders is not available; in the first place therefore holders of £5,000 nominal and over of this class of stock are requested to forward their names and addresses, together with the amount of stock held, to Mr. Arthur G. Dennis, Secretary (pro. tem.), at 15, Curzon Street, W.1.

Italian Railway Accident.—About 6 p.m. on November 22, a passenger train from Cividale to Udine when three miles from San Gottardo, fell into the River Torre, due to the collapse of the bridge spanning that stream, which was swollen by floods. In all 16 persons are known to have lost their lives, including the driver, fireman, and a guard, and it is feared that other bodies may have been swept away in the flood.

B.A. Western New Debenture Stock.—An amount of £310,000 5½ per cent. collateral debenture stock was created by resolution of the board of the Buenos Ayres Western Railway Limited on November 16. Cazenove Akroyds & Greenwood & Co. has agreed to buy this stock from the railway company at 98½ per cent. less a commission of one-half per cent. for payment in full on December 8. A notice of this issue has been made in order to comply with the regulations of the Stock Exchange, and not as an invitation to the public to subscribe.

Industrial Holidays.—The Right Hon. Lord Amulree, as Chairman of the Royal Society of Arts, delivered the inaugural address at the first ordinary meeting of the society on November 2. Lord Amulree referred to the history of industrial holidays, and to the evolution of the Saturday half-holiday, and the Bank Holidays Act. The recommendations of the Government Departmental Committee of which Lord Amulree was Chairman, led to the introduction by the Government of the Holidays With Pay Bill, referred to in THE RAILWAY GAZETTE, of July 15, at page 134. The recommendations of the committee were outlined in our issue of May 6.

B.S.S. for Telegraph and Telephone Wires.—British Standard Specifications Nos. 174-181, Overhead Line-wire Material (Non-ferrous) and Nos. 182-184, Galvanised Iron and Steel Wire, both for telegraph and telephone purposes, which have recently been under revision, have now been published. Copies of the two series may be obtained from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 2s. 2d. each, post free.

Canadian Pacific Earnings.—Gross earnings of the Canadian Pacific Railway for the month of October, 1938, amounted to $16,935,000, an increase of $2,206,000 in comparison with October, 1937. Working expenses were $10,889,000, or $439,000 higher, leaving net earnings $1,767,000 higher, at $6,046,000. Aggregate gross earnings for the first ten months of 1938 were $117,281,000, a decrease of $2,550,000, and the net earnings of $13,377,000 for the same period showed a fall of $3,976,000.

Canadian National Earnings.—The October, 1938, gross earnings of the Canadian National Railways were $19,935,153, an increase of $606,796 compared with October, 1937. Operating expenses amounted to $15,284,292, with a decrease of $612,490, resulting in net earnings of $4,650,861, which were higher by $1,219,286. Aggregate gross earnings for the first ten months of 1938 amounted to $150,272,587, a decrease of $15,131,069, and the net earnings for the ten months were $2,195,607, as compared with $13,959,438 for the first ten months of 1937.

The "Square Deal" Campaign

During the past week the four main-line railway companies have sponsored an energetic press campaign in support of their claim for "A Square Deal." In addition banners and posters are being displayed at stations throughout the country. A view showing some of those exhibited at Waterloo station is published on page 960. The Railway Companies Association has issued three manifestos, one of which is reproduced on page 979. The others read as follow:—

TO EVERY MEMBER OF THE PUBLIC

If you think the railways are doing their job—

If you want them to go on giving vital service to your interests as they have done for over 100 years—

If you think they ought not to be tied hand and foot by out-of-date restrictions on their charges for your merchandise—

SUPPORT THEIR CLAIM TO PARLIAMENT FOR EQUALITY

AND A SQUARE DEAL—NOW
SEE YOUR NEWSPAPER

TO BUSINESS MEN AND WOMEN

Could you manage your business successfully—

IF your prices were controlled by Law whilst your competitors were free?

IF you were *compelled at these prices* to accept all the jobs refused by your competitors?

These are two of the crippling conditions under which the Railways have now to compete for the carriage of your merchandise.

GIVE THE RAILWAYS EQUALITY WITH THEIR COMPETITORS

GIVE THEM A SQUARE DEAL NOW
SEE YOUR NEWSPAPER

Yesterday the general managers of the four railways had a further meeting with the Minister of Transport, when it is understood, that they indicated the nature of the Bill they desired the Minister to present to Parliament and their reasons for asking for this relief. It is expected that the Minister and the chairmen of the companies will meet early next week.

Carriers' Act

The railway companies have officially announced that their proposals do not alter in any way their liabilities under the Carriers' Act, nor do they ask for any relief under that Act. This is entirely consistent with the policy of "equality for all," since the Carriers' Act applies to all forms of transport. Road carriers as well as railways may be common carriers when they provide a regular booked service as the railways do. A letter by "Lex" to the Editor of *The Times* dealing with the subject of common carriers is discussed in an editorial note on page 943.

The railways have no intention of refusing to carry any traffic which is offered to them in suitable conditions. Where they are common carriers now they will remain common carriers. All they ask is the freedom to charge what rates are suitable and appropriate for the goods they are bound to carry under the Carriers' Act.

Mr. Marchbank on the Situation

The road-rail situation has called forth an article in the *Railway Review* by Mr. J. Marchbank, General Secretary of the National Union of Railwaymen, who contends that the companies have presented their case purely from their own standpoint, without reference to the position of the railway workers or to their claims for improved wages and other conditions of service. Mr. Marchbank is led to the conclusion that the Government should take steps to co-ordinate the entire transport system of the country with the object not only of eliminating cut-throat competition, but of creating a completely integrated transport service which will be adequate for all demands made upon it in the national interest. He contends that the Government should take steps forthwith to establish a national transport authority to examine the entire problem, and prepare a scheme for bringing the whole transport system under public control.

XUM

Forthcoming Events

Dec. 2 (*Fri.*).—Institution of Mechanical Engineers, Storey's Gate, London, S.W.1, Parsons Memorial Lecture: "Sir Charles Parsons and Marine Propulsion," by Mr. S. Cook.

Omnibus Society, at Inst. of Marine Engineers, The Minories, London, E.C.3, 7 p.m. Display of Transport Films.

Dec. 3 (*Sat.*).—Stephenson Locomotive Society (Midlands-Northern), at 4, Bury Old Road, Manchester, 6.30 p.m. "The Sheffield and Rotherham Railway," by Mr. R. Taylor.

Dec. 5 (*Mon.*).—G.W.R. (Birmingham) Lecture and Debating Society, at Great Western Hotel, Snow Hill Station, 6.30 p.m. Debate with London Society.

Railway Students' Association, at London School of Economics, Houghton Street, W.C.2, 6 p.m. "Commercial Organisation of the French Railways," by M. Cazenave.

Royal Society of Arts, John Street, London, W.C.2, 8 p.m. "Refractory Materials (III)," by Mr. J. Partridge.

Dec. 6 (*Tues.*).—Institute of Transport (Bristol), at the University, 6 p.m. "Carriers of Passengers by Road—Their Duties and Liabilities," by Mr. R. Holloway.

Institute of Transport (Leeds), at Hotel Metropole, King Street, 6.30 p.m. "Transport Advertising," by Mr. C. Dandridge.

Institute of Transport (Metropolitan Graduate), at Inst. of Electrical Engineers, Savoy Place, W.C.2, 6 p.m. "Booking the Passenger," by Mr. H. Viney. "Agreed Charges," by Mr. S. Carter.

Dec. 7 (*Wed.*).—Institute of Metals (London), at Charing Cross Hotel, 8 p.m. "Modern, Non-Ferrous Foundry Practice," by Mr. F. Hudson.

Permanent Way Institution (London), at Underground Railways' Dining Club, Pelham Street, S.W.7, 7 p.m. "Gardening Work on the Permanent Way," by Mr. B. Moran.

Royal Society of Arts, John Street, London, W.C.2, 8.15 p.m. "Standards of Quality and the Machinery for Establishing Them," by Mr. E. Armstrong.

Dec. 8 (*Thurs.*).—Institute of Transport (Manchester-Liverpool Graduate), at Grosvenor Hotel, Manchester, 7 p.m. "Passenger Station Working," by Mr. F. Meadows.

Dec. 9 (*Fri.*).—Institute of Transport (Newcastle), at Royal Station Hotel, 8 p.m. "British and Foreign Roads," by Mr. A. Cheyne.

Institute of Transport (Newcastle Graduate), at Royal Station Hotel, 6.15 p.m. Three Short Papers.

Railway Club, at Broad Street Station Restaurant, London, E.C.2, 7 for 7.30 p.m. Annual Dinner.

Forthcoming Meetings

Dec. 8 (*Thurs.*)—**Bengal-Nagpur Railway Co. Ltd.** (Ordinary General), 132, Gresham House, Old Broad Street, E.C., at noon.

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 47th Week			Totals to Date		
	1938	1937	Inc. or Dec.	1938	1937	Inc. or Dec.
	£	£	£	£	£	£
L.M.S.R. (6,834¼ mls.)						
Passenger-train traffic...	395,000	403,000	– 8,000	24,487,000	24,489,000	– 2,000
Merchandise, &c. ...	427,000	525,000	– 98,000	21,138,000	23,470,000	– 2,332,000
Coal and coke ...	269,000	314,000	– 45,000	11,741,000	12,087,000	– 346,000
Goods-train traffic ...	696,000	839,000	– 143,000	32,879,000	35,557,000	– 2,678,000
Total receipts	1,091,000	1,242,000	– 151,000	57,366,000	60,046,000	– 2,680,000
L.N.E.R. (6,315 mls.)						
Passenger-train traffic...	262,000	265,000	– 3,000	15,864,000	15,956,000	– 92,000
Merchandise, &c. ...	330,000	380,000	– 50,000	14,873,000	16,157,000	– 1,284,000
Coal and coke ...	248,000	282,000	– 34,000	11,115,000	11,728,000	– 613,000
Goods-train traffic ...	578,000	662,000	– 84,000	25,988,000	27,885,000	– 1,897,000
Total receipts	840,000	927,000	– 87,000	41,852,000	43,841,000	– 1,989,000
G.W.R. (3,737 mls.)						
Passenger-train traffic...	168,000	170,000	– 2,000	10,305,000	10,377,000	– 72,000
Merchandise, &c. ...	182,000	211,000	– 29,000	8,749,000	9,477,000	– 728,000
Coal and coke ...	109,000	131,000	– 22,000	5,050,000	5,294,000	– 244,000
Goods-train traffic ...	291,000	342,000	– 51,000	13,799,000	14,771,000	– 972,000
Total receipts	459,000	512,000	– 53,000	24,104,000	25,148,000	– 1,044,000
S.R. (2,140 mls.)						
Passenger-train traffic...	258,000	253,000	+ 5,000	15,361,000	15,381,000	– 20,000
Merchandise, &c. ...	60,000	66,500	– 6,500	2,866,000	3,004,500	– 138,500
Coal and coke ...	32,000	39,500	– 7,500	1,428,000	1,438,500	– 10,500
Goods-train traffic ...	92,000	106,000	– 14,000	4,294,000	4,443,000	– 149,000
Total receipts	350,000	359,000	– 9,000	19,655,000	19,824,000	– 169,000
Liverpool Overhead ... (6½ mls.)	1,243	1,314	– 71	63,625	61,170	+ 2,455
Mersey (4½ mls.) ...	4,452	4,266	+ 186	206,687	198,187	+ 8,500
*London Passenger Transport Board ...	562,600	537,000	+ 25,600	12,467,100	12,347,500	+ 119,600
IRELAND						
Belfast & C.D. pass. (80 mls.)	1,626	1,663	– 37	117,109	120,951	– 3,842
,, ,, goods	515	474	+ 41	20,650	23,004	– 2,354
,, ,, total	2,141	2,137	+ 4	137,759	143,955	– 6,196
Great Northern pass. (543 mls.)	8,400	7,600	+ 800	521,650	524,100	– 2,450
,, ,, goods	11,100	9,450	+ 1,650	434,650	448,550	– 13,900
,, ,, total	19,500	17,050	+ 2,450	956,300	972,650	– 16,350
Great Southern pass. (2,076 mls.)	26,032	25,494	+ 538	1,727,416	1,723,240	+ 4,176
,, ,, goods	54,744	56,822	– 2,078	1,946,199	2,006,851	– 60,652
,, ,, total	80,776	82,316	– 1,540	3,673,615	3,730,091	– 56,476

*22nd week (before pooling)

British and Irish Railway Stocks and Shares

Stocks	Highest 1937	Lowest 1937	Prices Nov. 30, 1938	Prices Rise/Fall
G.W.R.				
Cons. Ord. ...	67 3/8	55 3/4	27 1/2	– 1/2
5% Con. Prefce....	127	108	80	– 4
5% Red.Pref.(1950)	113	109	97 1/2	—
4% Deb.	113 5/8	102 1/2	99 1/2	– 2
4¼% Deb.... ...	118	106	102 1/2	—
4½% Deb.... ...	124 1/2	112	109 1/2	– 1
5% Deb.	136 1/2	122 3/4	122 1/2	—
2½% Deb.... ...	76	64	64 1/2	– 2
5% Rt. Charge ...	133 7/16	118	118 1/2	—
5% Cons. Guar. ...	133 3/4	116 1/2	107	– 1
L.M.S.R.				
Ord.	36 1/8	25 3/8	12 1/4	– 1/4
4% Prefce. (1923)	82 1/2	65 3/4	25 1/2	– 1
4% Prefce. ...	92 1/2	77 3/4	46 1/2	– 1
5% Red.Pref.(1955)	107 3/4	102	73 1/2	– 1
4% Deb.	108	99 1/4	92 1/2	– 2
5% Red.Deb.(1952)	117 1/2	111	108	—
4% Guar. ...	104	95 7/8	81 1/2	– 3
L.N.E.R.				
5% Pref. Ord. ...	12 1/2	6 3/4	4	– 1/4
Def. Ord.	6 1/4	3 5/8	2 1/4	—
4% First Prefce.	79 1/2	63	23 1/2	– 1
4% Second Prefce.	31 1/2	21	10	—
5% Red.Pref.(1955)	101 1/4	89 3/4	45 1/2	—
4% First Guar. ...	103	91 7/8	71 1/2	– 1
4% Second Guar.	97 5/8	85 1/2	56	+ 1/2
3% Deb.	84 1/8	74	66 1/2	– 2
4% Deb.	107 1/4	98 1/2	88 1/2	– 2
5% Red.Deb.(1947)	113 1/2	106 1/2	106 1/2	—
4½% Sinking Fund Red. Deb.	110 5/16	105 1/2	105 1/2	—
Southern				
Pref. Ord. ...	98 5/8	83 1/2	57 1/2	– 1/2
Def. Ord. ...	27 7/8	16 3/4	13	– 1/2
5% Pref.	126 1/16	105 13/16	91 1/2	– 3
5% Red.Pref.(1964)	118	110 1/4	100 1/2	—
5% Guar. Prefce.	133 3/4	116 5/4	114 1/2	—
5% Red.Guar.Pref. (1957)	118 1/2	111 1/2	111 1/2	—
4% Deb.	112	101 1/4	100 1/2	– 2
5% Deb.	135 3/4	123 1/2	122 1/2	—
4% Red. Deb. 1962–67	113	105	106 1/2	—
Belfast & C.D.				
Ord.	5	4	4	—
Forth Bridge				
4% Deb.	106	99 1/2	97 1/2	– 3
4% Guar. ...	105 3/4	99	96	– 3 1/2
G. Northern (Ireland)				
Ord.	11	5	3 1/2	—
G. Southern (Ireland)				
Ord.	50	21 1/2	15	—
Prefce.	61	34	17	—
Guar.	94 3/4	69 1/2	39	—
Deb.	95	82 1/8	56 1/2	—
L.P.T.B.				
4½% "A" ...	123 3/4	110 1/2	109 1/2*	– 1
5% "A" ...	135	121 1/2	117 1/2*	– 1
4½% "T.F.A." ...	108 3/4	104	104 1/2	—
5% "B" ...	125	114 1/2	113 1/2*	—
"C"	99 3/4	75	78 1/2	– 1/2
Mersey				
Ord.	42 3/8	22	20	—
4% Perp. Deb. ...	103	96 3/4	97 1/2	—
3% Perp. Deb. ...	77 5/8	74 1/2	71 1/2	—
3% Perp. Prefce.	68 3/4	61 1/4	55	—

* ex dividend

TO EVERY MEMBER OF THE PUBLIC

Remember, the RAILWAYS are ESSENTIAL IN PEACE, VITAL IN WAR.

Their financial position is grave.

They are playing their part well now. Can they go on doing it?

YES—if they have a fair chance.

NO—if they are bound while their competitors are free.

Road Carriers, Canal Carriers, Coastwise Carriers, are free to quote without restriction whatever charges are appropriate in each case. Railways alone are restricted. Why?

Red tape is tough: old prejudices die hard: it is hard to shake off the dead hand of restriction. But it must be shaken off, if the Railways are to survive and play their part.

The need for action is urgent, it must not be deferred until it is too late.

A short Act of Parliament is required this Session to meet a crying national need.

Support the claim of the RAILWAYS for Equality

and

A SQUARE DEAL NOW

ISSUED BY THE RAILWAY COMPANIES' ASSOCIATION

PARLIAMENTARY NOTICE

IN PARLIAMENT.

Session 1938-39.

London Midland & Scottish Railway

NOTICE IS HEREBY GIVEN that application has been made to Parliament in the present Session by the London Midland & Scottish Railway Company (hereinafter referred to as "the Company") for leave to bring in a Bill for purposes of which the following is a concise summary:—

1.—Acquisition by compulsion or agreement of lands in the Parish of Wheathampstead in the Rural District of Saint Albans and in the Urban District of Harpenden in the County of Hertford and in the City and County Borough of Nottingham.

2.—Special provisions as to entry and compensation.

3.—Stopping up and discontinuance of portion of Lancaster Canal in the Borough of Kendal in the County of Westmorland.

4.—Stopping up roads in the County Borough of Warrington and in the Urban district of Hoyland Nether in the West Riding of the County of York.

5.—Extension of time for completion of the railway authorised by the London Midland & Scottish Railway Act, 1934; and release of sum deposited in connection therewith.

6.—Extension of time for compulsory purchase of lands in the Urban Districts of Alderley Edge and Wilmslow in the County of Chester in the Metropolitan Borough of Saint Pancras and in the Urban District of Abergele in the County of Denbigh.

7.—To re-enact with or without amendment powers of the Company relating to holding selling disposal and building on or over lands of the Company.

8.—Incorporation application amendment or repeal of Acts.

AND NOTICE IS HEREBY FURTHER GIVEN that on or before the 20th day of November, 1938, plans of all lands which may be taken or used compulsorily with a book of reference to such plans were deposited for public inspection as follows (that is to say):—As regards the lands in the County of Hertford with the Clerk of the County Council at his office at Hertford and as regards the lands in the City and County Borough of Nottingham with the Town Clerk at his office at Nottingham.

AND that copies of so much of the said plans and book of reference as relates to each of the several areas hereinafter mentioned in which the lands are situate were on or before the 20th day of November, 1938, deposited for public inspection as follows (that is to say):—As relates to the Urban District of Harpenden and the Rural District of St. Albans with the Clerk of the District Council of each said district at his office: as relates to the Parish of Wheathampstead with the Clerk of the Parish Council at his office.

On and after the 4th day of December, 1938, a copy of the Bill may be inspected and copies thereof obtained at a price not exceeding Two Shillings for each copy at the Stationmaster's office at the following railway stations of the Company, viz.:—Harpenden, Nottingham, Kendal, Warrington, Elsecar and Hoyland, Stockport and Denbigh, and also at the undermentioned offices.

Dated this first day of December, 1938.

H. L. THORNHILL,
10, Great College Street,
Westminster, S.W.1.
Chief Legal Adviser.

BEALE & CO.,
22, Great Smith Street,
Westminster, S.W.1.
Parliamentary Agents.

LEGAL AND OFFICIAL NOTICES

Railway Rates Tribunal.

RAILWAYS ACT, 1921.
LOCAL GOVERNMENT ACT, 1929.

NEW EXCEPTIONAL RATES.
REDUCTION OF EXCEPTIONAL RATES.
CLASSIFICATION OF MERCHANDISE.
REDUCTIONS FOR OWNER'S RISK.
RAILWAY FREIGHT REBATES SCHEME.

NOTICE IS HEREBY GIVEN that the Court of the Railway Rates Tribunal will sit on the following dates:—

Tuesday, 17th January, 14th February, 14th March, 18th April, 16th May, 13th June, 11th July, 17th October, 14th November and 12th December, 1939, to hear:

Applications as to the granting of New or the reduction of existing Exceptional Rates for which the consent of the Tribunal is required,

and

Applications to the Tribunal for New Exceptional Rates or for the reduction of Exceptional Rates.

NOTICE IS FURTHER GIVEN that the Court will sit on the following dates:—

Tuesday, 24th January, 25th April, 18th July and 24th October, 1939, to hear:

Applications to determine any questions as to the alteration of the Classification of Merchandise, or the alteration of the Classification of any article, or the Classification of any article not at the time classified, or any question as to the Class in which any article is classified,

Applications as to the Reductions to be made from the Standard Charges where Damageable Merchandise is carried under Owner's Risk Conditions,

and

Applications to determine any question as to whether any Rebate is or was allowable or as to the basis on which any Rebate should be or should have been calculated under the Railway Freight Rebates Scheme.

Printed copies of the Procedure to be followed in any of the above-mentioned Applications can be obtained from the Office of the Tribunal.

T. J. D. ATKINSON,
Registrar.

Railway Rates Tribunal,
Bush House,
Aldwych,
London, W.C.2.
1st December, 1938.

THE Cleansing Committee of the Manchester Corporation is prepared to receive Offers for:—

59 10-ton Standard Railway Wagons, lying at the Committee's Siding at Carrington, *via* Glazebrook,

and

a considerable amount of materials, new and usable for repairs to above wagons, in stock at the Cleansing Depot, 299, Oldham Road, Manchester.

The above may be inspected at the respective Sidings and Depot, and further particulars may be obtained upon application to Mr. Bertram B. Jones, Director of Public Cleansing, Town Hall, Manchester, 2.

Offers must be received at such address not later than 10 a.m. on the morning of Monday, 12th December, 1938.

The Committee does not bind itself to accept the highest or any Offer.

R. H. ADCOCK,
Town Clerk.

Bengal-Nagpur Railway Company Limited

THE Directors are prepared to receive Tenders for:—

24 HSM CLASS BOILERS.

Specification and Form of Tender can be obtained at the Company's Offices, 132, Gresham House, Old Broad Street, London, E.C.2, on or after 30th November, 1938.

A fee of 20s. will be charged for each copy of the Specification, which is *NOT* returnable.

Tenders must be submitted not later than Noon on Friday, 16th December, 1938.

The Directors do not bind themselves to accept the lowest or any Tender, and reserve to themselves the right of reducing or dividing the order.

By Order of the Board,
T. R. WYNNE,
Managing Director.

Canadian National Railway Company

WELLINGTON GREY & BRUCE RAILWAY COMPANY, 7 PER CENT. BONDS.

NOTICE IS HEREBY GIVEN that the estimated earnings of the Wellington Grey & Bruce Railway Company for the half-year ending 31st December, 1938, applicable to meet interest on the above Bonds, will admit of the payment of £4 2s. 0d. per £100 Bond, and that this payment will be applied as follows, *viz.*:—

£1 13s. 2d. in final discharge of Coupon No. 113 due 1st January 1927; and £2 8s. 10d. on account of Coupon No. 114 due 1st July, 1927, and will be made on and after 1st January next at the offices of the Canadian National Railway Company, Orient House, 42/5, New Broad Street, London, E.C.2, England.

The Coupons must be left three clear days for examination.

A. H. CONEYBEARE,
European Secretary and Treasurer.

London.
30th November, 1938.

Canadian National Railway Company

WELLINGTON GREY & BRUCE RAILWAY COMPANY, 7 PER CENT. BONDS.

AT the semi-annual ballot for November, 1938, the following Wellington Grey & Bruce Railway Company 7 per cent. Bonds were drawn and will be paid at par at the offices of the Canadian National Railway Company in Montreal, Canada, or at Orient House, 42/5, New Broad Street, London, E.C.2, England, on the 1st January next, that is to say, Bonds numbered:

358, 452, 487, 549, 901, 936, 1027, 1132, 1283, 1468, 1786, 1826, 1857, 2032, 2154, 2185, 2259, 2424, 2490, 2551, 2610, 2657, 2682, 2711, 2726, 2730, 3045, 3145, 3165, 3207, 3227, 3335, 3359, 3424, 3425, 3427, 3830, 3834, 3852, 3915, 4192, 4209, 4287, 4433, 4445, 4468, 4568, 4569, 4629, 4663, 4750, 4888, 4921, 4948, 4981, 5117, 5131, 5191.

In all £5,800 sterling.

Holders of these Bonds will take notice that the interest will cease after 1st January next.

A. H. CONEYBEARE,
European Secretary and Treasurer.

London.
30th November, 1938.

London and North Eastern Railway Company

NOTICE IS HEREBY GIVEN that for the purpose of preparing the warrants for Interest on the Company's 3 per cent. and 4 per cent. Debenture Stocks and 4½ per cent. Sinking Fund Debenture Stock for the half-year ending 31st December, 1938, the balances will be struck as at the close of business on 12th December, and Interest will be payable only to those Stockholders whose names are registered on that date.

Transfers of the above-mentioned Stocks should, therefore, be lodged with the Registrar of the Company at Hamilton Buildings, Liverpool Street Station, London, E.C.2, before 5.0 p.m. on 12th December.

By Order,
P. J. DOWSETT,
Secretary.

Marylebone Station,
London, N.W.1.
2nd December, 1938.

Central Argentine Railway Limited

NOTICE is hereby given that the Transfer Books of the 4 per cent. Debenture Stock, and the 3½ per cent. Central Debenture Stock of the Company will be closed from the 8th to the 20th December, both days inclusive, for the preparation of Warrants for interest for the half-year ending 31st December, 1938.

RONALD LESLIE,
London Manager and Secretary.

3a, Coleman Street,
London, E.C.2.
30th November, 1938.

Official Notices—(*continued*).

THE MADRAS & SOUTHERN MAHRATTA RAILWAY COMPANY LIMITED invite Tenders for :—

80 TONS (APPROX.) SPRING STEEL.

Specification and Form of Tender can be obtained at the Company's Offices, 123, Victoria Street, Westminster, London, S.W.1.

Fee ONE GUINEA *which will not be returned.*

Tenders must be submitted not later than 2.00 p.m. on TUESDAY, 20TH DECEMBER, 1938.

The Directors do not bind themselves to accept the lowest or any Tender and reserve to themselves the right of reducing or dividing the order.

By Order of the Board,
V. CRASTER,
Secretary.

OFFICIAL ADVERTISEMENTS

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to :—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

Universal Directory of Railway Officials and Railway Year Book

44th Annual Edition, 1938-39

This unique publication gives the names of all the principal railway officers throughout the world, together with essential particulars of the systems with which they are connected. Much general and statistical information about railways is also concisely presented.

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CONTRACTS AND TENDERS

J. Honor & Son Ltd. has received the contract from the London Passenger Transport Board for the construction of offices to be built at the London Transport garage on the corner of Marlow Hill and Queen Alexandra Road, High Wycombe. The contract for the building, which will be of one storey with a flat roof, has just been placed. The gravel in front of the garage will be replaced by concrete paving. The offices will comprise a conductors' room, an inspectors' room, a mess room, and a cashier's room, out of which there will be a hatch through to a lobby for the use of members of the public making inquiries.

Improvements to King's Cross Station

Wellerman Brothers has received a contract from the L.N.E.R. for the widening of the island platforms, Nos. 7 and 8, King's Cross main line station. These platforms at present have a combined width of only 12½ ft., but when the new contract has been completed this will be increased to 24 ft. A new parcels depot is at present under construction at King's Cross and a subway is being excavated to connect the depot with the station platforms; the widening of Nos. 7 and 8 will enable this platform to be served by the subway. Lifts will operate between the subway and the platforms and all parcels traffic will be conveyed to and from the parcels depot underground, avoiding any congestion of parcels and mail barrows on the platforms themselves.

Leyland Motors Limited has received an order from the Cumberland Motor Services Limited for four double-decked oil-engined passenger vehicles.

Surhammar Bruks A.B. has received an order from the Bombay, Baroda & Central India Railway, to the inspection of Messrs. Rendel, Palmer & Tritton, for 250 locomotive tyres.

The Bengal-Nagpur Railway Administration has recently placed the following orders :—

Rice & Co. (Leeds) Ltd.: One 150-ton hydraulic forging press.

Butler Machine Tool Co. Ltd.: One shaping machine.

Linley & Company: Quantity of copper plates.

The Chinese Government Purchasing Commission, on behalf of the Chinese Ministry of Communications, has placed the following orders, to the inspection of Messrs. Fox & Mayo, for equipment required for the Hunan Kwangsi Railway :

Robert Hudson Limited: 650 Steel side tip wagons.

Holman Bros. Limited: Drill steel sharpeners and accessories

Ruston & Hornsby Limited: 10 Sets of diesel-engined centrifugal pumps.

W. H. Wilcox & Co. Ltd.: 20 Sets of hand-operated pumps.

The Chief Controller of Stores, Indian Stores Department, has recently placed the following orders :—

Turner Hoare & Co. Ltd.: One 6½-in. lathe and one belt-driven screwing machine.

Alfred Herbert (India) Limited: One surface grinding machine, one 16-in. stroke high-speed crank shaping machine, and one brass finishers' large double-head milling machine.

Machine Tools (India) Limited: One lever shearing machine and one general purpose wheel lathe.

Richardson Cruddas & Co.: One high-speed radial drilling, boring, tapping and studding machine.

Associated British Machine Tool Makers Limited: One portable locomotive horn cheek grinding machine and one belt-driven gear planer.

Heatly & Gresham Limited: One patent indented nut making machine, one heavy duty forging machine, and one vertical type bolt and rivet, forging and heading machine.

A. C. Bottomley & Company: Two automatic slot drilling and key-way cutting machines.

Shaw Wallis & Company: Quantity of fishbolts and dog spikes.

Jessop & Co. Ltd.: 2,952 cwt. of S.M. rounds.

Martin & Company: Quantity of S.M. rounds.

The South African Railways and Harbours Administration, Stores Department, is calling for tenders (Tender No. 1993) for the supply and delivery during the period July, 1939, to June, 1940, of quantities of train lamps and fittings, including hand, signal, tail and side lamps, burners, reservoirs, glasses, &c. Tenders endorsed "Tender No. 1993 for Lamps and Fittings," should reach the Chief Stores Superintendent, Room 38A (Purchase Section), S.A.R. Headquarters, Johannesburg, by January 5. Tenderers are required to submit a sample of each type of lamp and burner which they propose to offer to the Office of the Chief Stores Superintendent before the closing date for receipt of tenders. Local representation is essential, and the Department of Overseas Trade is prepared to furnish firms desirous of tendering for the supply of articles of United Kingdom manufacture, and not represented in South Africa, with the names of United Kingdom merchant houses with local connections who may be willing to handle tenders on their behalf.

Tenders are invited by the Bombay, Baroda & Central India Railway Administration, receivable by December 21, at the White Mansion, 91, Petty France, Westminster, S.W.1, for the supply of spring steel, bolts, nuts, and rivets.

Tenders are invited by the Bengal-Nagpur Railway Administration, receivable by December 16, at 132, Gresham House, Old Broad Street, London, E.C.2, for the supply of 24 HSM class locomotive boilers.

Tenders are invited by the Chief Controller of Stores, Indian Stores Department (Electrical Section), New Delhi, receivable by January 3, for the supply of one 75 kW. d.c. diesel engine-driven generating set required for the Bahawalpur Power House, North-Western Railway.

The L.N.E.R. is arranging to renew 569 miles of track and 65 bridges during 1939. The renewal of track will involve laying 85,000 tons of steel rails on 50,000 tons of iron chairs attached to 1,200,000 sleepers.

The L.N.E.R. is to provide an electric capstan with nine fairleads in Lavenham goods yard for shunting purposes. The layout of the goods yard at Lavenham does not permit of shunting being performed by locomotives and a horse is at present used to haul the wagons.

B.E.N. Patents Limited announces that it is transferring from Gorst Road, Park Royal, London, N.W.10, to a new and larger works adjacent to the associated company, Broom & Wade Limited at Hughenden Avenue, High Wycombe, Bucks, from January 3, 1939. The new telephone number will be High Wycombe 1630 (4 lines), and telegraphic address Tooinwun, High Wycombe.

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Railway Share Market

At the beginning of the week there was a general decline of values on the Stock Exchange owing to the inactive market conditions resulting from the influence of the uncertainty attaching to international affairs. Later, however, sentiment benefited from the more reassuring news from France and also from the view, expressed in some quarters, that the Chancellor of the Exchequer's statement on Tuesday indicates the possibility that expenditure on armaments may be met without having recourse to a further increase in income tax.

Railway securities were affected by the reactionary conditions in evidence earlier in the week, and subsequently they failed to show much recovery from the lower prices ruling. The traffic returns again emphasised the justice of the claim that the railways should be allowed complete freedom to compete with road hauliers. Nevertheless, the reforms claimed raise a number of controversial points, and the market is taking the view that no early final decision can be expected. Great Western ordinary at **28** has lost part of its recent improvement, but, in common with most other Home railway securities, it is above the low level ruling a few weeks ago when **26½** was touched. Great Western **5** per cent. preference has reacted sharply to **80**, while the **4** per cent. debentures were lower at **99⅛**. Debentures and prior charge stocks as a whole were influenced by the trend in Government stocks shown in the early part of the week.

L.M.S.R. stocks were affected to some extent by the postponement of the half-yearly dividend on the **5** per cent. redeemable **1935** preference, although this had been generally expected in view of the heavy decrease in traffics. The ordinary was lower at **12**, but tended to attract buyers later in the week, and similar remarks apply to the **4** per cent. preference at **46⅛** and to the **1923** preference at **26**. The **4** per cent. guaranteed stock gave way to **82** and the **4** per cent. debentures to **92**. L.N.E.R. first and second preferences were **23½** and **9¾**, while the **3** per cent. and **4** per cent. debentures were **66** and **88** respectively, and the first guaranteed gave way to **71½** and the second guaranteed to **55**. Southern preferred ordinary went back to **57½**, although there are new hopes in the market that the dividend for the year may be **4** per cent. The deferred stock transferred around **13**, the **5** per cent. preference was **92** and the **4** per cent. debentures **99½**. London Transport "C" was lowered to **78½**, in sympathy with the general market trend, despite the more hopeful views as to dividend prospects.

Argentine railway securities have not maintained the better tendency which developed last week, the disposition being to await reflection of the better crops in traffic receipts. Although ordinary stocks were relatively steady, the preference stocks and debentures of the B.A. Great Southern, Central Argentine and other railways lost part of last week's rally. Elsewhere, Antofagasta, San Paulo, and Leopoldina receded.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1937–38	Week Ending	Traffics for Week: Total this year	Traffics for Week: Inc. or Dec. compared with 1937	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1937	Prices: Lowest 1937	Prices: Nov. 30, 1938	Yield (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	27.11.38	13,910	– 8,950	48	706,140	799,180	– 93,040	Ord. Stk.	29	10¼	9	Nil
	Argentine North Eastern	753	26.11.38	7,816	– 714	22	228,951	213,960	+ 14,991	„	19¼	6	5½	Nil
	Argentine Transandine	—	—	—	—	—	—	—	—	A. Deb.	93½	60	80	5
	Bolivar	174	Oct., 1938	3,551	– 150	44	37,200	53,050	– 15,850	6 p.c. Deb.	9½	5	8½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds.	17	9	6	85/16
	Buenos Ayres & Pacific	2,806	26.11.38	81,700	+ 2,296	22	1,556,579	1,719,728	– 163,149	Ord. Stk.	17⅛	5½	4½	Nil
	Buenos Ayres Central	190	5.11.38	$115,900	– $11,900	19	$2,275,200	$2,674,500	– $399,300	Mt. Deb.	41½	18	16	Nil
	Buenos Ayres Gt. Southern	5,084	26.11.38	129,218	– 9,824	22	2,645,037	2,676,179	– 31,142	Ord. Stk.	33¾	13½	11½	Nil
	Buenos Ayres Western	1,930	26.11.38	51,055	+ 3,102	22	864,330	999,939	– 135,609	„	31¾	11¼	8½	Nil
	Central Argentine	3,700	26.11.38	103,703	– 7,814	22	2,204,054	2,782,236	– 578,182	„	34¼	10¼	10½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	20½	4½	3½	Nil
	Cent. Uruguay of M. Video	972	19.11.38	22,102	+ 2,057	21	358,152	334,709	+ 23,443	Ord. Stk.	6732	2	2	Nil
	Cordoba Central	1,218	—	—	—	—	—	—	—	Ord. Inc.	6¼	1½	3¼	Nil
	Costa Rica	188	Sept., 1938	28,168	– 973	13	74,983	78,446	– 3,463	Stk.	38	27	24	85/16
	Dorada	70	Oct., 1938	15,800	+ 1,100	44	163,800	154,300	+ 9,500	1 Mt. Db.	107	106	105	511/16
	Entre Rios	810	26.11.38	13,641	– 360	22	335,959	293,539	+ 42,420	Ord. Stk.	19716	6	6	Nil
	Great Western of Brazil	1,092	26.11.38	13,700	+ 800	48	351,200	378,900	– 27,700	Ord. Sh.	5/4	1/3	1/4	Nil
	International of Cl. Amer.	794	Sept., 1938	$371,340	– $15,056	39	$4,189,954	$4,341,014	– $151,060	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	2/	1/-	1/2	Nil
	La Guaira & Caracas	22¾	Oct., 1938	6,230	+ 2,075	44	53,110	51,820	+ 1,290	Stk.	8½	6	8½	Nil
	Leopoldina	1,918	26.11.38	24,529	+ 1,453	48	1,011,818	1,105,714	– 93,896	Ord.Stk.	9¼	3	2	Nil
	Mexican	483	21.11.38	$240,800	+ $21,900	21	$5,383,900	$5,998,800	– $614,900	„	1½	1/4	1/8	Nil
	Midland of Uruguay	319	Oct., 1938	9,090	– 181	18	34,073	33,065	+ 1,008	„	1⅞	1/2	1/2	Nil
	Nitrate	386	15.11.38	4,622	– 4,693	46	126,914	135,662	– 8,748	Ord. Sh.	31/16	2	1¾	511/16
	Paraguay Central	274	23.11.38	$2,499,000	– $2,530,000	22	$64,346,000	$70,502,000	– $6,153,000	Pr. Li. Stk.	84	79¼	57½	5316
	Peruvian Corporation	1,059	Oct., 1938	65,795	– 18,482	18	278,342	347,951	– 69,609	Pref.	14⅝	4½	2¾	Nil
	Salvador	100	19.11.38	¢12,375	– ¢3,425	21	¢239,164	¢258,194	– ¢19,030	Pr. Li. Db.	23½	21½	19½	Nil
	San Paulo	153½	20.11.38	27,217	+ 4,954	47	1,442,957	1,504,544	– 61,587	Ord. Stk.	98½	56	35	117/16
	Taltal	160	Oct., 1938	3,885	+ 1,070	18	11,785	12,885	– 1,100	Ord. Sh.	17/6	11/16	5/8§	16
	United of Havana	1,353	26.11.38	12,446	– 1,827	22	342,314	361,125	– 18,811	Ord. Stk.	5⅝	31/32	1	Nil
	Uruguay Northern	73	Oct., 1938	1,119	+ 157	18	3,900	3,382	+ 518	Deb. Stk.	10	2	2	Nil
Canada	Canadian National	23,721	21.11.38	762,162	+ 10,670	47	32,389,289	35,416,908	– 3,027,619	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	– 4 p.c.	Perp. Dbs.	77	62½	70½	511/16
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	101⅞	94½	102½§	3⅞
	Canadian Pacific	17,186	21.11.38	557,000	– 22,400	47	25,254,800	25,771,400	– 516,600	Ord. Stk.	18	7¼	6½	Nil
India†	Assam Bengal	1,329	10.11.38	50,640	+ 4,931	30	891,187	829,378	+ 61,809	Ord. Stk.	86	73½	78½	313/16
	Barsi Light	202	10.11.38	6,067	+ 2,745	30	90,180	76,125	+ 14,055	Ord. Sh.	66½	46	58½	615/16
	Bengal & North Western	2,116	10.11.38	88,323	+ 14,150	6	295,891	285,400	+ 10,491	Ord. Stk.	317	301	281	615/16
	Bengal Dooars & Extension	161	10.11.38	5,465	+ 479	30	93,276	91,508	+ 1,768	„	100	84	87½	711/16
	Bengal-Nagpur	3,268	10.11.38	191,100	+ 14,085	30	4,135,242	4,191,064	– 54,822	„	101	89	94½	4¼
	Bombay, Baroda & Cl. India	3,085	20.11.38	236,475	– 14,700	32	5,434,500	5,510,025	– 75,525	„	113	110½	108½	5½
	Madras & Southern Mahratta	2,967	10.11.38	148,200	+ 25,542	30	3,330,408	3,157,505	+ 172,903	„	110	105	103½§	813/16
	Rohilkund & Kumaon	571	10.11.38	12,198	+ 1,554	6	49,598	48,194	+ 1,404	„	314	302	287	6¼
	South Indian	2,531¾	10.11.38	99,693	+ 2,465	30	2,533,284	2,558,394	– 25,110	„	103½	99½	102½	4⅝
Various	Beira-Umtali	204	Sept., 1938	83,497	– 14,553	52	1,037,185	975,721	+ 61,464	—	—	—	—	—
	Egyptian Delta	620	10.11.38	7,493	– 993	30	135,960	146,474	– 10,514	Prf. Sh.	31/-	5/4	1/2	Nil
	Kenya & Uganda	1,625	Aug., 1938	182,150	– 14,527	35	1,860,357	1,920,155	– 58,798	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	48⅛	43½	47	7716
	Midland of W. Australia	277	Sept., 1938	17,029	+ 2,026	13	44,686	37,926	+ 6,760	Inc. Deb.	98	93½	90	4⅞
	Nigerian	1,900	22.10.38	28,677	– 8,367	30	887,558	1,382,672	– 495,114	—	—	—	—	—
	Rhodesia	2,442	Sept., 1938	410,764	– 21,548	52	4,950,384	4,635,398	+ 314,986	—	—	—	—	—
	South Africa	13,285	19.11.38	621,545	– 53,442	34	20,707,572	21,502,873	– 795,301	—	—	—	—	—
	Victoria	4,774	Aug., 1938	762,903	+ 61,343	9	1,479,248	1,421,092	+ 58,156	—	—	—	—	—

NOTE.—Yields are based on the approximate current prices and are within a fraction of 1/16

† Receipts are calculated @ 1s. 6d. to the rupee § ex dividend

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being overestimated. The statements are based on the current rates of exchange and not on the par value